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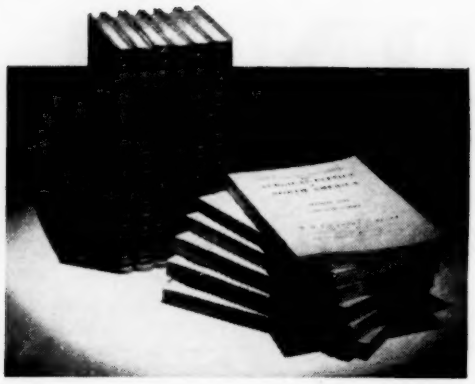

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CARE OF RESPIRATORY PARALYSIS FROM POLIOMYELITIS

John F. Marchand, M.D., New York

Disabilities and deaths from poliomyelitis reached a record number in 1952. The incidence of cases of paralysis has varied with place and year, but fatalities are largely respiratory and to an increasing extent preventable when a community prepares in advance. Although the death rate has been cut in some areas, care of postacute poliomyelitis has been relatively neglected. An underestimation of community care requirements or improvised planning for the acute and convalescent stage of poliomyelitis can be costly and ineffective.

EMERGENCY CARE

To function efficiently, facilities for management of acute poliomyelitis should be centralized only to a degree limited by the distribution of cases and the rapidity with which help must be given. A local team prepared for respiratory emergency can reduce the immediate mortality from poliomyelitis and other causes of respiratory paralysis. The center for such care must be within easy reach and prepared to admit without delay, day or night, patients with symptoms or signs of bulbar, respiratory, or shoulder-level paralysis. The staff may be organized around a physician and supervising nurse, but each member requires advance instruction and practical experience in use of respiratory equipment and in the care of long-term paralyzed patients. Administrative planning in advance is required if the proper personnel, physical facilities, and equipment are to be available when needed.

Personnel.—The physician in charge must plan for bedside care by attendants and practical nurses trained and supervised by experienced graduate nurses. He must avoid the common but wasteful practice of using professionally qualified nurses for unskilled labor, since this or other diversion of professional personnel to nonprofessional assignments is inept and unprofitable. Among requisite hospital services special reference may be made to administrative assistance, social service, maintenance for equipment, radiography, and a responsible clinical laboratory. Consultation and treatment by specialists should be available as needed, but only one person can really be the patient's physician: one person who is oriented to comprehensive medical care and who deals with the patient and his family directly.

Physical Facilities.—A specific ward area should be set aside for patients in danger of a respiratory paralysis. Suitable working space is an open ward with a wide aisle and 10 by 15 ft. (150 sq. feet.) of bed space for each patient. Space for rocking beds and other bulky equipment besides tank respirators can thus be allowed. Crowding of patients acutely ill with respiratory paralysis, whether under emergency conditions or otherwise, is inefficient and dangerous. Small private-sized hospital rooms or cubicles with partitions are an unsatisfactory makeshift in the care of poliomyelitis with a respiratory complication. Efficient use of equipment or personnel is impossible. In open ward space the care of many patients can be supervised simultaneously, critically ill patients can be placed in key spots, heavy equipment can be moved about, and curtains can be drawn for privacy. Locking power-outlets, separate fuses for each unit, and an emergency generator are required for a safe power supply to the respirators. A central location is needed for the nurse's station, linen supply, and a utility room with sterilizer, sink, and bedpan hopper. Light shaded toward the wall for indirect illumination diverts glare from the patient's eyes and encourages rest. In the hot season that accompanies poliomyelitis epidemics, air conditioning prevents fatalities by heat prostration. Space is needed in which relatives of the critically ill can wait, and a room may be set aside in which ward personnel can relax from time to time. Respiratory emergencies of children and adults can most easily be treated as one unsegregated group since they require the same special care and equipment. All the patients with acute paralytic poliomyelitis, whether or not in obvious danger of respiratory paralysis, will need observation and care in close proximity to the respiratory emergency center.

Equipment.—Requirements for the respiratory ward include a portable spirometer and a positive pressure resuscitation machine, a treatment table and cart, metal

This study was aided by a grant from the National Foundation for Infantile Paralysis.

The Moser Life-Saver is a suitable pharyngeal airway. Portable full-body respirators are under development by a U. S. Air Force laboratory at Randolph Field, San Antonio, Texas, and by the J. J. Monaghan Co., Inc., Denver. The universal-type cuirass respirator pump assemblies supplied by Technicon-Huxley, Ltd., New York, and J. J. Monaghan Co., Inc., A relay-selector switch assembly designed by J. Neisewinter, 21 Jefferson St., Garden City, N. Y., permits a patient who can move one toe or the equivalent to control lights, television, rocking bed, and telephone; it has been used for full control of a tape recorder, and the principle appears applicable to the electronic organ or electric typewriter.

or rubber pharyngeal airways, metal mouth gags and tongue depressors, laryngoscopy, tracheotomy, and bronchoscopy sets, parenteral fluid stands, steam inhalators for tracheotomy care, suction machines, hot pack machines, tank respirators, rocking beds, accessible radiographic and fluoroscopic equipment. Ordinary hospital beds are not needed. A mobile patient-lift device is helpful. Respirator alarms checked daily and a patient-to-nurse call system provide for emergency signaling. A tall stool and a cabinet for the bedpan, supplies, linen, personal belongings, and a suction pump are to be placed at each respirator. The supply needs include assorted rubber catheters for nasal and intratracheal use and extra tracheotomy tubes in duplicate.

Although dyspnea is an indication for mechanical artificial respiration, it is not the only one, since prolonged carbon dioxide retention has a sedative effect on respiratory effort. Rapid shallow respiration, a short counting ability below 10 from one breath, or a falling vital capacity, below 30% of the predicted as measured by a spirometer, or collapse are other indications for mechanical respiratory aid. A tracheotomy should be performed at the very beginning if there are signs of actual or impending airway obstruction by pharyngeal paresis, aspirated saliva or bronchial secretions. Patients with pharyngeal paresis require frequent aspiration, postural drainage of the pharynx, or a tracheotomy and should be watched for signs of respiratory muscle involvement. To rely on oxygen therapy for obstructive or paralytic respiratory failure is dangerous unless means are provided for carbon dioxide excretion by effective pulmonary ventilation. Immediate attention is required to correct electrolyte and fluid depletion. Sedatives are best avoided until the patient is in a respirator. Narcotics may be fatal.

The tracheotomy tube should be high enough to avoid obstruction by the respirator collar, of the largest possible size, and preferably of silver, nylon, or polyethylene; plate over brass wears off. Tubes for small children should extend short of the carina by fluoroscopy. Tracheotomy tubes must be replaced for cleanliness at least once a week. Air or oxygen funneled to a tracheotomy may be moistened by bubbling through hot water to reduce bronchial crust formation. Attendants require direct bedside instruction on frequent aspiration of secretions and of crusts or "plugs" from the trachea and large bronchi. Prone postural drainage or frequent direct aspiration is required for pharyngeal secretions not swallowed because of paresis. It is helpful to record the blood pressure daily. The vital capacity, tidal air, and time with each respiratory aid should be charted.

Reliable mechanical respiratory aids have been developed and their use described for treatment at the acute stage.[1] When poliomyelitis is prevalent, an extra tank respirator must be kept ready. Respirators with a positive pressure dome or equivalent attachment are preferable for patients totally dependent on mechanical aid. Cuirass respirators have not been efficient enough for the emergency stage of neuromuscular respiratory failure of emergency transportation, although of great value at the convalescent stage. Rocking beds are of value from the beginning, and cuirass respirators are becoming useful after the first critical days for a gradual changeover from the tank respirator. Forced "weaning" from respiratory aids is disastrous,[2] and surreptitious reduction of respirator pressure settings is an indefensible practice.

Complications of the febrile stage of poliomyelitis with respiratory paralysis include those of any severe attack of the disease, notably dehydration-prostration with anuria or acetonuria, alkalosis, myalgia, transient paresis of the bladder or various levels of the gastrointestinal system, hyperpyrexia, and cardiac arrhythmias. There is an acute respiratory acidosis with carbon dioxide retention and a strongly acid urine when the pulmonary ventilation becomes inadequate. The carbon dioxide combining power of the plasma rises thereafter following renal compensation by base retention and excretion of fixed acids. Occasionally the physically exhausted patient has a convulsive seizure. Pulmonary atelectasis and pneumonitis are common for the patient cannot cough effectively. Pulmonary emboli and hemorrhages are relatively infrequent. Nutrition becomes important only after the immediate respiratory emergency is met, but it is a big problem during convalescence. Bowel and bladder management, positioning, turning, relief of muscle pains, provision for rest and sleep, and avoidance of hysteria rank in importance with control of bronchial infections and measures to prevent the urinary calcifications. Heavy losses of tissue calcium through the kidneys make it necessary to force fluids, acidify the urine by ammonium chloride or other means, and avoid urinary infection by urea-splitting organisms. Necessary catheterization is carried out with strict attention to asepsis. If a surgical emergency occurs, anesthesia by the usual positive-pressure inhalation apparatus or an endotracheal airway through the tracheotomy is satisfactory and safe. Major operations have been carried out successfully on patients with a respiratory muscle paralysis. Bronchoscopy by way of a tracheotomy is a less disturbing procedure than that by the routine approach.

ISOLATION

Although isolation has been widely practiced and is frequently required by law at the febrile stage of poliomyelitis, the rationale of the routine has become obsolete in view of a lack of correlation between pyrexia and excretion of the virus. No isolation technique has been of proved value. Adults caring for patients with poliomyelitis in the acute or postacute stages are already immune by prior infection, usually an unrecognized one, or must be expected to become so by a concurrent infection if not protected by vaccine. They cannot escape exposure by fecal contamination of fingers, fomites, or dust from bedding. Gown-and-mask rituals for acute poliomyelitis interfere with care and protect no one. The virus is excreted with the feces, and briefly in small amount via the nose and mouth. Appropriate handling of bedpans and bedclothes is justifiable, and it is obviously desirable to sterilize virus-bearing excreta, although community sewage systems and flies still collect virus from a variety of sources during the poliomyelitis season. Complicating infection of the upper respiratory tract

1. Wilson, J. L.: The Use of the Respirator in Poliomyelitis, New York, National Foundation for Infantile Paralysis, Inc., 1940. Plum, F.: Respiratory Failure in Neuromuscular Disorders, in Monographs in Medicine: Series 1, Bean, W. B., ed., Baltimore, Williams and Wilkins Company, 1952, pp. 225-270.

2. Marchand, J. F., and Marcum, A. T.: Respiratory Recovery Rates After Poliomyelitis, Am. J. Med., to be published.

is a serious but not readily avoidable danger. Gauze masks worn by hospital personnel to protect patients from upper respiratory tract infections are admirable in purpose but only give a false sense of security.

In a busy respiratory emergency ward the needs of the family often are overlooked. A permissive and understanding attitude toward relatives will ease their burden. Families need informative reports from the physician, frequent access to the patient, and support from a social worker. Early in convalescence, family members and friends should be encouraged to assist with patient care. It is sometimes desirable to allow a parent to sleep at the bedside of the critically ill child.

Transportation problems for patients with respiratory paresis arise as soon as they are well enough for home visits or transfer to a center for convalescent care. All should have easy access to a care center in case of relapse or for follow-up evaluations. Transfers have been made by ambulance, truck, rail, and air and are safest when a tank-type respirator is used for long trips. For trips of half a day and longer two or three persons can take turns hand pumping the tank respirator bellows, one of them a graduate nurse familiar with the equipment and the patient. For long trips by moving van a gasoline-driven electrical generator may be mounted on the tail board. A battery-operated cuirass respirator has been suitable only for short trips away from the ward if the patient has been skillfully fitted and adjusted to it well in advance and extra batteries are on hand. It is useful for home visits or trips to special events during convalescence. For long transfers by rail it has been convenient to replace temporarily the 110 volt, ⅓ horsepower tank respirator motor by a 30 volt D. C. motor for the power supply of a baggage coach. A newly designed pump assembly for cuirass respirators operates interchangeably either on 110 volt power, or on a battery, or on the 24 to 30 volt electric power available on trains and airlines. For a two day transfer of nine tank respirators bolted to the floor of a baggage coach, for example, an extra belt-driven 10 kilowatt generator, extra batteries, and a set of power lines with separate fuses were installed by the Louisville and Nashville Railroad. Although Pullman cars carry 110 volt power for electric razors, a 3 kilowatt, 110 volt motor generator was installed temporarily for four 110 volt cuirass-type respirators in standard Pullman bedrooms. Most convalescent patients in respirators enjoy the adventure of such travel.

Patients with the postacute stages of poliomyelitis should be centrally registered and followed regularly for signs of scoliosis or other delayed effects of muscle imbalance. Those who have had a paresis of respiratory muscles should never be abruptly "weaned" from mechanical aid and sent home. Sudden previously unexplained deaths or deaths attributed to upper respiratory tract infection occur by what is termed a postpoliomyelitis respiratory fatigue syndrome: a gradual failure of weak and partly paralyzed respiratory muscles by progressive fatigue after premature removal of mechanical respiratory aid. Such patients appear to be independent of mechanical aid for days or weeks, but the vital capacity diminishes insidiously. The patient becomes unable to call for aid.

CONVALESCENT CARE

The life of a young person who must remain paralyzed and deformed may be salvaged at the febrile stage of poliomyelitis, but heroic efforts in this direction are difficult to justify unless the problems that will follow are faced. Convalescence, or a decline, continues for years, and constructive treatment over this interval becomes a medical undertaking not at all less urgent than the original lifesaving effort. The practical requirements for convalescent care and the disastrous effects of delay are easily overlooked after a summer epidemic passes and community interest dwindles. There are now 1,000 or more young adults and children in respirators scattered singly and in small groups in emergency care areas, the residue of recent epidemics. These neglected young people represent a demoralizing and costly nursing problem that may last indefinitely unless suitable facilities for long-term care can be offered. Within two or three weeks after respiratory paralysis by poliomyelitis, surviving children or adults should be transferred to large regional centers staffed and equipped for such patients. Soundly financed respiratory centers can undertake to give comprehensive care to 100 or more patients with good results at a daily cost lower than that required for perfunctory care of small groups. (Several centers supported in part by grants from the National Foundation for Infantile Paralysis are now in operation.) It is not economical to attempt care for isolated patients or small numbers if the emphasis is on a quick turnover of patients or facilities are otherwise inadequate.

Beyond the elementary medical complications for which the staff of a modern hospital can provide exemplary care, there remains a basic treatment problem that has been met realistically in some instances but only on a token scale: the need for planned education of these young persons to an acceptable way of life. A majority of patients with quadriplegic respiratory paresis remain in hospitals or homes under expensive arrangements for care, in which there is little prospect beyond mental and physical deterioration.

The complications of convalescence and sometimes of neglect include: pulmonary atelectasis and pneumonitis; thromboses and emboli; hypertension; urinary infections and calculi; decubitus or ulcers from the respirator collar; swallowing disorders; stomach or bowel dilation; fecal impactions; emaciation; anxiety; epileptiform attacks; depression; contractures; generalized arthralgia; joint fixations; denervation and disuse atrophies; pulmonary hemorrhages; and occasional minor signs such as acne and hypertrichosis. However, most patients display a reassuring measure of fortitude and a cheerful demeanor once they acquire confidence in the ward personnel on whom they must depend and can participate actively in discussion of the treatment they are to attempt. Learning to breathe again or to use new types of respirator equipment, they progress most rapidly in the company of others with similar problems. They learn glossopharyngeal breathing movements from one another, fear mishaps and complications less, and become motivated through identification with each other. Respirator schedules and pressure-setting orders are preferably written regularly by the physician, leaving to all

nurses, therapists, and others on the ward a standing responsibility to give at once more adequate respiratory aid, a tank respirator, whenever a patient requests it or appears to need it. Weekly respiratory aid performance schedules can be posted on colored bedside wall charts for the convenience of everyone, and the patient may be encouraged to direct his weaning schedule orders within the limits considered safe by the physician. Relapses occur when patients push ahead too rapidly.

A variety of routine matters require attention. Dental repairs become necessary and can easily be made while the patient is in a respirator. The tracheotomy, if present, requires continuous attention until recovery of ability to cough makes its removal obviously practicable. The value of any long-term tracheotomy is dubious. It is desirable that the tracheotomy be closed as soon as possible to minimize secretions in the airway. Closure should be offered with a full realization by the patient that this airway protection can easily be reopened if needed. Such closure occurs spontaneously as soon as the tracheotomy tube is removed, but a minor plastic skin repair may follow. A bronchoscopy through the tracheotomy should precede the closure, since it sometimes reveals a polyp at the operative site.[3] Tendons or fascial bands may require surgical attention. The joints become permanently deformed unless correctly supported and moved daily through full range. A warm tank or pool is needed for muscle training. Regenerating muscle groups usually require skillfully directed education for a year, and in some instances surgical redirection by tendon transplantation. The acne improves under daily ultraviolet therapy. Special diets are not regularly required, but the food served must be attractive and unrestricted in amount or variety if the patient is undernourished.

INDEPENDENCE OF MECHANICAL AIDS

The majority of patients with respiratory paresis under treatment eventually recover respiratory independence; a few remain partially or totally dependent on mechanical respiratory aid.[2] Dependence on a respirator has been blamed on contributory psychological or biochemical addiction, but is virtually always a result of paralysis. Proof of psychological dependency on respiratory aid has been lacking. Even the patients who recover fully or partially from a respiratory paralysis regularly retain an extensive paralysis of the trunk and extremities requiring braces, prosthetic devices, and adaptive equipment.

These patients have sustained a loss of muscle power and joint mobility, but not of mental power and personality. They do not decline to a vegetative stage unless neglected, and can benefit substantially by constructive care. The goals of treatment must be recognized from the beginning as different from ordinary standards, but not necessarily unhappy ones for that reason. With help the patient can achieve independence, satisfaction, and pride. The task of finding him an appropriate vocation and awakening interest is no small one. Prompt institution of an adaptive training program is essential, including elementary school for small children, and vocational schooling for the teen-age and adult group.

Convalescent centers for the severely disabled patient are of necessity in or near large general hospitals. The atmosphere of the physical facilities provided can, however, reflect a distinct departure from the businesslike and sanitary decor of the usual emergency care area. There must be an auxiliary generator to assure a safe power supply, access ramps and fire exits, free open-ward space, and other care facilities planned for efficiency. More space is required than that used for the acutely ill patient, because of extra equipment needs: at least 150 sq. ft. for each patient. A sound-absorbent ceiling is preferable. Individual screens are desirable for small motion picture or microfilm projectors. The major needs for respiratory equipment can best be met by alternate placement of tank respirators and rocking beds, allowing one respirator for each severely paralyzed patient and eliminating movement of equipment each time a patient is lifted from a respirator to a rocking bed. Over-bed orthopedic and adaptive equipment supports are used above rocking beds. Cuirass respirators can be used at will on rocking beds not in motion, hence no space need be taken up by ordinary hospital beds. Colored draw curtains are desirable, but not fixed partitions. Television, motion pictures, games, group activities, and trips both outdoors and indoors can become a part of the day. All time not required for therapy or special procedures should be filled with activity, as much as possible of it by, rather than for, the patient. Patients above the age of 6 can learn to play chess or other table games. Neighborhood social or entertainment groups may be invited to participate. Group activities with special direction are to be encouraged and assigned space that might otherwise go to storage of equipment. An intensive adaptive equipment program is in order. Devices that assist the patient include automatic page turners, ham radio apparatus and "high fidelity" music equipment. Individual earphones provide reception without annoyance to others. Racks may be provided for the portable telephones, tape recorders, and intercommunication sets that clutter floors and tables. Most patients should learn to feed themselves, to use an electric typewriter, or to read microfilm books with the aid of relay-controlled projectors. Aided by physical and occupational therapists each can learn substantial self-help in use of his remnants of musculature. Standing beds, which may be cranked to an upright angle, are of value for adaptation to upright positions. Prescribed splints, corsets, and special wheel chairs permit increasing mobility. A daily rest hour protects against overexertion.

The education of a group of long-term young patients to a new way of life requires comprehensive medical care and planning with an orientation differing from that of most medical center ground rules. Continuing ingenuity is required for partial replacement of lost physical powers with the aid of mechanical equipment, and for restoration of a personality structure by special training and reestablishment of communication with others. Use of technical communications equipment and congenial visiting by family and friends are therefore to be encouraged as meeting one of the most elementary of the patient's needs.

The staff required for convalescent care needs special training for this job. Continuity of personnel and policy is important. The physician in charge must be professionally oriented to total care and able to call on con-

3. Affeldt, John: Personal communicaton to the author.

sultation from specialty services, for example, general surgery, orthopedics, urology, dentistry, physical medicine, and psychiatry. Although he may be actively interested in respiratory physiology, psychology, biochemistry, a medical specialty, or other unilateral features of the problem, his prime concern must be the balanced medical and social needs of the patient. He requires administrative and secretarial assistance to see that all such phases of care are provided. He must be constantly prepared to sustain the enthusiasm of ward personnel and of hospital fellows and interns who can benefit by participation in an active program for convalescent care. A teaching and investigation schedule complementing model bedside care can set a high standard in the management of poliomyelitis as a catastrophic illness.

Nursing accounts for much of the cost and contributes decisively to the effectiveness of care for poliomyelitis. At a center for quadriplegic respiratory patients a nursing supervisor with unusual fortitude, training, and ability is indispensable. To carry through a continuous training program for attendants, staff nurses, and others, a clinical instructor in nursing is also required. Trained attendants under nursing direction can relieve staff nurses of routine or nonprofessional duties. Failure to attract able nurses in adequate number is an administrative breakdown compounded by burdens placed on a skeleton staff. Skilled nursing supervision and care are basic for treatment of extensively disabled patients.

Daily physical therapy must be planned with adequate equipment, such as hydrotherapy tanks, powdered tables, mats, bars, plinths, and elevated bath tubs, with adequate nonprofessional assistance. Physical therapy schedules are important and best not interrupted by other ward activities. A common error has been to underestimate physical therapy needs or to waste the therapist's time on nonprofessional work. The physical therapist is responsible for teaching range-of-motion work on stiffening joints, for functional muscle reeducation, and for correct rest positions with sand bags, knee rolls, arm splints, and shoes. One full-time therapist can help seven patients with respiratory quadriplegic poliomyelitis.

OCCUPATIONAL THERAPY

Occupational therapy of the professional level is required for rebuilding the personality, functional training toward self-care, education to purposeful activities of the hands or other parts of the body, and use of prosthetic devices. The recreational aspects of occupational therapy are purely incidental. It has been common practice to underestimate the need for occupational therapy, for adaptive equipment and for shop facilities or supplies for occupational therapy. At least one professionally-trained occupational therapist can properly be made available for each 12 or 15 quadriplegic patients. Volunteers and students can be of value to supplement the work of the occupational therapist but not to replace him. Physical and occupational therapy and the use of adaptive equipment are medical services requiring formal direction, prescription and checking by a qualified physician for avoidance of excess strain on paretic muscles. Social service is a key function at a poliomyelitis center because of the complexity of the problems of these patients and their families. Admissions, discharges, transportation, home care and home visits by a public health nurse, and a variety of direct care problems are arranged by a medical social worker.

PSYCHIATRIC OR PSYCHOLOGICAL HELP

Restoration of individual judgment and initiative, a recovery of some measure of physical power by regular, directed exercise of respiratory or other muscle remnants, with ample rest intervals, and bracing for limb or body support with power assists where feasible, are among the goals of treatment. In view of the need to build up the patient's self-confidence it is preferable not to spotlight his psychiatric problems as such by efforts at direct psychiatric therapy under conditions that preclude privacy. These patients do, however, urgently need psychiatric study and help. Group as well as individual therapy is practical and of high value. Patients in groups may be encouraged to formulate their own rules with respect to hours and privileges as an active participation in conduct of the ward. Psychiatric or psychological help is of great value to the staff as well as to the patients.

A physically normal or average person confronted by the spectacle of a severely disabled or handicapped person may react by resenting subconsciously both the disease and the patient so afflicted. Some ward workers display excessive solicitude, or assume overprotective, domineering, condescending, or authoritative attitudes. Patients who remember asphyxia and sudden paralysis as a terrifying experience are frequently left with an anxiety and insecurity reflected in a hostile, demanding, or critical attitude toward single staff members and overdependence or attachment to others. They cry for reassurance by constant and frequently unreasonable demands. They may become negativistic, and frequently object in particular to shifts in location or personnel. Such patients or similarly behaving relatives become objects of reactive hostility from inadequately trained ward personnel or professional staff members. It is necessary, therefore, that families and friends of convalescent respiratory patients be allowed many visits with the patient and that they be helped to establish a close, cordial working relationship with the professional staff. Families should be taught to participate regularly in care, to secure better institutional adjustment, and to prepare for home visits. Families must learn by practice not to overprotect but to encourage independence and activity by the patient. The patient needs to learn social adjustments to others similarly disabled and later to normal persons and strangers. Routine problems of this type require medical direction aided by psychiatric advice. Weekly full-staff conferences are best directed primarily to case teaching and active discussion by all sections of the staff. Informal participation by community representatives and visiting nurse association members in these conferences is desirable.

A comprehensive national recovery program for quadriplegic respiratory patients is now as urgently needed as the excellent one in effect for the benefit of the blind: a practical schedule directed toward a restoration of confidence and dignity modeled after the achievements of Helen Keller, who set the precedent of an active career, although blind, deaf, and speechless. Persons who are physically or socially restricted in specific directions

perform admirably in others if given the opportunity. The pervasive undercurrent of defeatism prevalent in much present planning for hospital or home care by-passes real potentialities for recovery. The need now is for specialized convalescent care centers and new "sheltered workshop" communities, from which young paralytic trainees, given needed help in a school atmosphere, can venture home visits although away at constructive work most of the time. Hasty plans for home care without a sound medical social service basis are little more than means by which community agencies can pass an overwhelming responsibility to surviving family members. When patients do go home, under appropriate circumstances, it must be with a regular schedule for return visits and evaluation in a regional center yearly or oftener. Such details as maintenance for the respirator and emergency generator and a formal program for therapy and activity as well as care require planning. More urgent than the need of a patient to return home prematurely is his need for a chance to learn work: to discover himself not as a burden of family liability but as a modest social and economic asset.

SUMMARY

The incidence of general and respiratory paralysis by poliomyelitis among children and young adults now makes it necessary to plan in advance for respiratory emergency care by trained and equipped local medical teams. The plans of care for acutely ill and convalescent patients outlined include use of decreasing amounts of mechanical respiratory aid but avoidance of relapses or sudden unexpected fatalities by a postpoliomyelitis respiratory muscle fatigue syndrome. After the immediate lifesaving emergency has been met, there is danger of a decrease in community interest in the larger problem that follows. Surviving children or young adults become costly long-term nursing and domiciliary problems unless transferred without delay to large regional centers that are staffed and equipped for constructive care over months or years. Plans limited to a quick turnover schedule or perfunctory preservation of life and control of ordinary medical complications reflect underestimation of the value and specific requirements for convalescent care. A pervasive defeatism behind custodial management by-passes potentialities for recovery and a reduction in care costs. Good results can only be sought aggressively through specific and timely provision for comprehensive long-term management. Medical and medical-auxiliary services bringing into use better adaptive equipment and a new standard for special education can elevate the status of a survivor of severe acute poliomyelitis from total vegetative dependency to that of a student and finally to that of a young person who need not wait, fancifully, for a full return to physical normality before he can rediscover his dignity and initiative as a productive person.

11 E. 68th St.

GAMMA GLOBULIN IN EPIDEMIC HEPATITIS

COMPARATIVE VALUE OF TWO DOSAGE LEVELS, APPARENTLY NEAR THE MINIMAL EFFECTIVE LEVEL

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The hypothesis [1] that the use of 0.01 to 0.06 ml. of gamma globulin per pound (0.5 kg.) of body weight during epidemics of viral hepatitis produces a passive-active immunity when the persons so treated continue at risk is based on the presence or absence of icterus in control and gamma globulin-treated groups. The results have been statistically significant in studies both in the field [2] and in closed institutions [1] in which epidemics existed. In this study the possibility was explored that, if gamma globulin were administered at a dosage level close to its lower limit of effectiveness, the more careful detection of subsequent anicteric cases of hepatitis might indicate whether mild or attenuated infections occurred and superimposed an active immunity on the protection afforded by the globulin. This report presents the incidence of abnormal findings in liver function tests in both control and gamma-globulin-treated groups during an epidemic of infectious hepatitis. The epidemic began during late July, 1952, in an institution for mentally defective persons. The institution has a population of about 900 men and boys between 5 and 85 years of age. There are 10 cottages with about 90 patients per cottage. The patients (except for the working patients of highest mental capacity) live, eat, and sleep in their respective cottages. Within five weeks after the onset of the first case of hepatitis with icterus, seven cottages were involved. Proper isolation techniques were established, and the study began on Sept. 25, 1952. The epidemiological survey indicated the spread to be by personal contact and apparently by the fecal-oral route. There had been an outbreak of hepatitis in 1949 and early 1950; however, the patients had been confined to two cottages that were not involved in the present study. Insofar as could be ascertained, the populations of the cottages were comparable, as were also lengths of stay of the patients in the institution. No patients had been present less than

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Margaret Heinemann, Mary Ming, and Vera Phillipi gave technical assistance in this study. Dr. Joseph Stokes Jr. gave constructive criticism on this paper.

1. (*a*) Stokes, J., Jr., and others: Infectious Hepatitis: Length of Protection by Immune Serum Globulin (Gamma Globulin) During Epidemics, J. A. M. A. **147**: 714 (Oct. 20) 1951. (*b*) Capps, R. B.; Bennett, A. M., and Stokes, J., Jr.: Endemic Infectious Hepatitis in an Infants' Orphanage: 1. Epidemiologic Studies in Student Nurses, A. M. A. Arch. Int. Med. **89**: 6 (Jan.) 1952.

2. Barondess, J. A., and others: An Epidemic of Infectious Hepatitis, to be published.

three months, and at least 95% of the population of each cottage had resided in the institution for two years or longer.

METHODS OF STUDY

After all persons above age 33 and, as far as possible, all those with a history of jaundice had been eliminated, 424 patients remained in the seven cottages. Blood was drawn from this entire group for initial liver function tests.[3] Among these 424 potentially susceptible persons, about one-third of the population of each cottage was selected at random for injection of gamma globulin. Of this group selected for injection, those in three cottages received 0.01 ml. and those in the remaining four cottages received 0.005 ml. of gamma globulin per pound of body weight intramuscularly. There were 71 and 86 patients receiving 0.01 and 0.005 ml. of gamma globulin, respectively, and 267 patients in the control groups (table 1). Liver function serum tests [3] were done weekly in both the treated and the control groups (table 2). A patient was arbitrarily considered to have anicteric hepatitis if three or more tests were abnormal. Because the patients were mentally retarded, symptoms were not reliable, and accurate diagnosis of anicteric cases could only be made by means of the liver function tests. Because successive weekly tests were carried out for 15 weeks on all patients by the three technical assistants without their knowledge of the patient, the alterations of liver function in any single patient from week to week provided reliable data. Only three cases of hepatitis with jaundice occurred in the first seven days after injection: one on the third and one on the fifth day in the 0.01 ml. group and one on the fourth day in the 0.005 ml. group. However, previous experience shows that little or no protection may be expected in the first five to seven days after injection of gamma globulin. The study was continued for a period of 15 weeks and then discontinued because no further icteric or anicteric cases occurred.

RESULTS

Among the 267 patients in the control groups there were 49 who had hepatitis with icterus and 85 persons with at least three abnormal liver function tests but no icterus. In the group of 86 patients who had injections of 0.005 ml. of gamma globulin per pound of body weight, 2 had hepatitis with jaundice and 31 had abnormal liver function tests (hepatitis without icterus), while of the 71 patients who received a dose of 0.01 ml. of gamma globulin per pound of body weight, 3 had hepatitis with jaundice and 25 had abnormal liver function tests but no icterus. The incidence of hepatitis with and without icterus in the control groups is shown in table 3. The data for each cottage are listed in table 4. It is significant that 70.9% of anicteric infections in the 0.005 ml. group occurred before the sixth week after injection, whereas in the 0.01 ml. group only 24% of anicteric infections occurred before, and 76% after, the sixth week following injection; corresponding figures for the controls were within four points of 50% of infections in each period.

TABLE 1.—*Distribution of Treated and Control Patients by Cottages*

	0.005 Ml. Gamma Globulin per Lb.					0.01 Ml. Gamma Globulin per Lb.				
Cottage no.	1	2	3	4	Total	5	6	7	Total	Grand Total
Treated	21	22	21	22	86	24	23	24	71	157
Control	36	38	39	39	152	38	37	40	115	267

At the time of the study six patients were in isolation in the hospital with amebiasis. They had not been in contact with persons with epidemic hepatitis for 21 to 40 days. These patients were given a dose of 0.01 ml. of gamma globulin per pound of body weight at the same time that the other injections were done, but they were not included in the cottage census. Owing to the persistence of Endamoeba histolytica cysts in their stools they were hospitalized for an additional seven to eight weeks. Hepatitis with icterus developed in three of these six patients within 29 days after their return to the cottages from hospital isolation—the incubation periods being 21, 25, and 29 days, respectively, if infection occurred immediately after release.

TABLE 2.—*Interpretation of Laboratory Tests for Liver Function*

Tests	Significant Readings
Serum tests	
Serum bilirubin	
Total	> 1.2 mg. per 100 ml
Direct, 1 min.	> 0.21 mg. per 100 ml.
Cephalin-cholesterol flocculation	> + in 24 hr., 2+ in 48 hr.
Thymol flocculation	> 2+ in 18 hr.
Thymol turbidity	> 4 units
Urine tests	
Bilirubin, Harrison spot test	+ or stronger
Urobilinogen, Wallace-Diamond test	1:30 or greater dilution

There was no significant difference in severity of illness and hepatic damage, as judged by liver function tests, between those who received the 0.005 ml. dose and the 0.01 ml. dose of gamma globulin.

COMMENT

These studies appear to shed some light on the mechanism of protection against epidemic hepatitis by gamma globulin. The globulin could conceivably protect in one of three ways:

1. By the production of passive immunity. Because antibody titers produced passively are known to fall rapidly and because the half-life of gamma globulin is known to be about 10 to 14 days,[4] passive protection by this material should be relatively short-lived. This appeared to be the case in the three patients who were isolated for seven to eight weeks after they had received 0.01 ml. per pound of body weight of gamma globulin and who later had hepatitis with jaundice when returned to the cottages. The exposure of these patients may have been heavy, and the additional factor of amebiasis may well have affected their apparent susceptibility. The passive protection of gamma globulin was apparently about 30 to 45 days; these patients, being isolated and thus not at risk daily to the hepatitis virus A, had no superimposed active immunity such as was indicated in those under daily risk. On the other hand, the length of protection afforded by gamma globulin when administered during

3. Drake, M. E., and others: Studies on the Agent of Infectious Hepatitis: II. The Disease Produced in Human Volunteers by the Agent Cultivated in Tissue Culture or Embryonated Hen's Eggs, J. Exper. Med. **92**: 283, 1950.

4. Dixon, F. J.; Talmage, D. W., and Maurer, P. H.: Half-life of Homologous Gamma Globulin (Antibody) Molecules in Man, Dog, Rabbit, Guinea Pig and Mouse, read before the American Association of Immunologists, 36th annual meeting, New York, April, 1952; abstracted, Fed. Proc. **2**: 466, 1952.

epidemics in institutions apparently involves mechanisms other than, or in addition to, simple passive transfer of immune bodies; thus, in three institutional outbreaks reported previously,[1] protection against epidemic hepatitis was shown to continue for several months. The finding, in appreciable numbers of patients treated with gamma globulin in the present study, of laboratory evidence of liver damage clearly indicates that mechanisms other than passive immunity were involved, as in the 0.005 ml. group occurrence of cases of anicteric hepatitis ceased on the eighth week, while in the 0.01 ml. group and both control groups anicteric hepatitis continued to occur into the 13th and 14th weeks.

2. By the production of active immunity, if the injected gamma globulin were a mixture of virus and antibody. This possibility appears unlikely, as such mixtures are not good immunizing agents in viral infections. If this were the mechanism of protection, it might be expected that occasional cases of hepatitis would occur after the gamma globulin injections; however, careful follow-ups of thousands of recipients of Red Cross gamma globulin have revealed no cases of hepatitis in which the globulin was clearly implicated.[5] The three isolated patients in whom hepatitis developed on exposure to the virus several weeks after receiving gamma globulin showed that it did not immunize actively.

3. By the production of combined passive-active immunity. This would imply that, with continuing exposure to the virus, active immunity, as a result of mild or in-

TABLE 3.—*Distribution, Total Incidence, and Percentages of Cases of Icteric and Anicteric Hepatitis in Treated and Control Groups*

	Gamma Globulin, 0.005 Ml. per Lb.				Gamma Globulin, 0.01 Ml. per Lb.			
	Treated (86)		Control (152)		Treated (71)		Control (115)	
Week	Hepatitis With Icterus	Hepatitis Without Icterus	Hepatitis With Icterus	Hepatitis Without Icterus	Hepatitis With Icterus	Hepatitis Without Icterus	Hepatitis With Icterus	Hepatitis Without Icterus
1	1*	1	2	2	2*	0	2	2
2	..	2	2	3	..	1	4	3
3	1	5	4	5	..	1	3	4
4	..	4	1	5	..	1	2	3
5	..	5	2	4	..	1	1	4
6	..	5	3	5	1	2	2	5
7	..	4	1	5	..	3	1	5
8	..	5	1	4	..	3	0	4
9	..	..	0	1	..	2	0	1
10	..	..	2	4	..	3	1	1
11	..	..	2	1	..	2	2	1
12	..	..	2	1	..	1	3	2
13	..	..	2	3	..	5	3	3
14	..	..	1	1	..	..	0	2
15	..	..	0	0	..	..	0	1
Total	2 (2.3%)	31 (36%)	25 (16.4%)	44 (29%)	3 (4.2%)	25 (35%)	24 (20.9%)	41 (35.6%)
Grand Total	33 (38.3%)		69 (45.4%)		28 (39.4%)		65 (56.5%)	

* Hepatitis with jaundice within five days after gamma globulin administration.

TABLE 4.—*Distribution by Cottages of Weekly Incidence of Icteric and Anicteric Hepatitis in Treated and Control Groups*

	Cottages with Patients Receiving 0.005 Ml. of Gamma Globulin per Lb.														Cottages with Patients Receiving 0.01 Ml. of Gamma Globulin per Lb.											
	1				2				3				4				5				6				7			
	Treated (21)		Control (36)		Treated (22)		Control (38)		Treated (21)		Control (39)		Treated (22)		Control (39)		Treated (24)		Control (38)		Treated (23)		Control (37)		Treated (24)		Control (40)	
Week	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric	Icteric	Anicteric
1	..	..	..	1	..	1	1	..	1*	..	..	1	..	..	1	..	1*	..	1	1	..	..	1	1	1*	..	..	..
2	..	1	1	..	..	..	1	2	..	1	1	1	..	..	1	1	..	1	1	1	..	..	..	..	..	..	1	1
3	..	1	1	1	..	1	1	1	..	1	1	2	..	2	..	1	..	..	1	1	1	1	2	1	..	..	1	2
4	..	1	..	1	..	1	..	1	..	1	..	1	..	1	1	1	..	..	1	2	..	..	..	1	..	1	1	1
5	..	1	1	1	1	1	..	1	..	1	1	1	..	2	..	1	..	..	..	1	..	..	..	1	..	1	1	2
6	..	1	1	1	..	2	..	1	..	1	..	1	..	1	1	1	..	1	1	2	..	..	1	2	..	1	1	2
7	..	1	..	1	..	1	1	1	..	1	1	1	..	1	..	1	..	1	..	2	..	1	..	2	..	1	..	2
8	..	1	..	1	..	2	..	1	..	1	..	1	..	1	..	2	..	1	..	1	..	1	1	..	..	1	..	1
9	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	..	..
10	..	..	..	1	..	..	..	1	..	..	..	..	..	..	1	..	..	1	1	1	..	1	..	1	..	1	1	1
11	..	..	1	..	..	..	1	..	..	..	1	..	..	..	..	1	..	1	1	..	..	1	..	..	..	..	..	1
12	..	..	..	..	..	..	..	..	..	..	1	1	..	..	1	1	..	..	1	..	..	1	1	..	..	..	1	1
13	..	..	1	1	..	..	1	1	..	..	..	1	..	..	..	1	..	2	1	1	..	1	1	1	..	2	1	..
14	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Total		7	6	10	1	9	6	10	1*	7	7	12	..	8	6	12	1*	9	9	14	1	7	7	12	1*	9	8	15

* Hepatitis with icterus within five days after administration of gamma globulin.

5. Drake, M. E.: Incidence of Hepatitis Following Administration of Gamma Globulin, read before a panel on gamma globulin, Society for Experimental Biology and Medicine, New York, 1952.

apparent infection, would supplant the waning passive immunity provided by the globulin injection. This would explain the long duration of protection in previously studied institutional outbreaks,[1] ranging up to nine months, and at the same time would agree with the observations of the relatively short half-life of gamma globulin [4] and the brief duration of passive protection noted in the three isolated patients. In addition, this concept appears to agree with the observed effect of the two dosage levels of gamma globulin used in this study. It is seen from table 4 that after the eighth week there were no additional icteric or anicteric infections in the 0.005 ml. group, even though icteric and anicteric infections continued to appear in the control group. This is in sharp distinction to the results in the 0.01 ml. group, in which anicteric infections continued to appear in both the injected and control groups. These observations at first sight appear to be opposed to the hypothesis of passive-active immunization; however, the observations support the hypothesis that the smaller dosage provided just enough antibody to neutralize most, but not all, of the antigen (hepatitis virus A) and thus permit constant slight anicteric infection from multiple exposures to the virus. Therefore, in the 0.005 ml. group most anicteric cases occurred in the first eight weeks, with a sharp decline in anicteric cases after that period. On the other hand, in the 0.01 ml. group there was sufficient antibody during the first weeks for neutralization and thus complete protection, except for an occasional infection. As the loss of potency of gamma globulin diminished the effect of passively transferred antibody, the level of antibody approached that which had existed previously in the 0.005 ml. group; additional anicteric cases then began to appear in the 0.01 ml. group, and the remaining susceptible persons experienced passive-active immunization. These findings, if correctly interpreted, would explain more fully the previous observations [6] in which the only criterion for hepatitis was icterus and the anicteric cases were almost entirely missed. If this hypothesis is valid in closed groups of persons in whom continuous exposure to hepatitis is occurring, a study of the protective effects of 0.005, 0.01, and 0.06 ml. doses per pound of body weight would be enlightening. In accordance with this hypothesis, many anicteric infections should occur early in the 0.005 ml. group, with few during this period in the 0.01 ml. group and possibly none in the 0.06 ml. group; later there should be additional anicteric infections in the 0.01 ml. group, and still later such infections should occur in the 0.06 ml. group.

It appears that with a dose of 0.005 ml. per pound early attenuation of the disease with active immunization was the chief effect produced, while with a dose of 0.01 ml. per pound, in addition to later attenuation and active immunization, some early overt cases of hepatitis were actually prevented, although inapparent infections may still have occurred. These findings suggest that the protection of a person depends not only on the time interval between globulin injection and exposure to hepatitis virus A but also on the dosage of gamma globulin. Thus, a person who received 0.01 ml. per pound, if exposed to the virus soon afterward that the degree of anticipated passive protection was relatively high, might be completely protected against infection; if the same person were exposed a little later, when passive immunity from the globulin injection was less, either anicteric hepatitis or inapparent infection with resulting active immunity might result; or if the exposure were even later, when only traces of antibody or no antibody remained, hepatitis with icterus might well occur. With a dose of 0.005 ml. per pound, on the other hand, these studies indicate that complete protection against infection is not usual and that a combination of passive and active immunization may operate over a wide range of time intervals between injection and exposure to the virus. In studies previously reported, the 0.01 ml. per pound dose of gamma globulin achieved long-term protection in one institution; in the other two institutions included in the same report a similar long-term protection was achieved with a dose of 0.06 ml. per pound. The observations that were made in the present study may explain the prolonged protection found in the previous studies. Whether gamma globulin injected in sufficient amounts might prevent both apparent and inapparent infections is not known; in addition, the possible variations in amount and virulence of the virus could conceivably alter the protective effect of gamma globulin.

SUMMARY

In a study of an epidemic of hepatitis in a closed institution, the observation that 0.01 ml. of gamma globulin per pound (0.5 kg.) of body weight protects against epidemic hepatitis with icterus was confirmed, and a dose of 0.005 ml. of gamma globulin per pound of body weight was found effective in preventing epidemic hepatitis with icterus. The 0.005 ml. dose was the less effective in the first eight weeks, but apparently during this period it had permitted enough anicteric and inapparent infections to develop so that very few anicteric infections occurred after the eighth week, while many such infections continued to appear in those receiving the 0.01 ml. dose. The results of the study indicated that passive immunity afforded by gamma globulin lasts about two months or less, unless the treated person is continually exposed to infection during this period, and that passive-active immunization in epidemic hepatitis may occur on administration of gamma globulin.

6. Stokes and others.[1a] Barondess and others.[2]

Diagnosis of Gastrointestinal Lymphoma.—Preoperative diagnosis of gastrointestinal lymphoma is difficult and requires careful correlation of clinical, radiologic and laboratory data to be successful in a reasonable proportion of cases. For example, the combination of epigastric pain, anorexia, nausea and vomiting, without signs of obstruction, slight to moderate weight loss, presence of a palpable mass, little or no anemia, and roentgen evidence of a large and angry looking tumor of the stomach, should lead to a strong suspicion of gastric lymphoma. Roentgen study alone is mostly unsuccessful in the differential diagnosis; roentgenograms are presented from lymphoma, carcinoma and chronic gastritis that are virtually interchangeable. If the tumor found at operation is unresectable, the surgeon should remove a portion of the main mass for pathologic study, and not be content with biopsy of neighboring lymph nodes. Frozen section diagnosis of tumor tissue is unreliable.—E. L. Lame, M.D.; C. A. Velat, M.D., and R. P. Custer, M.D., On the Diagnosis of Malignant Lymphoma of the Gastrointestinal Tract, *Annals of Internal Medicine*, January, 1954.

USE OF A NEW LONG-ACTING PENICILLIN COMPOUND IN SURGICAL INFECTIONS

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Much research has recently been directed to the problem of developing penicillin preparations that will maintain effective blood levels for long periods of time, thereby obviating the necessity for frequently repeated injections. Before the development of the Romansky formula (pencillin in oil and beeswax) in 1944, only short-acting aqueous preparations were available. These had to be given every three hours. However, with the development of the Romansky formula and the later use of procaine penicillin G in oil and in water, it became possible to maintain fairly effective blood levels for 24 hours with a single 300,000-unit injection. A recent advance in the synthesis of long-acting penicillin is the development of an insoluble salt, N,N¹-dibenzylethylenediamine dipenicillin G (benzathine penicillin G), which is considerably more insoluble than procaine penicillin. A single injection of 600,000 units has been shown to produce a peak of slightly more than 0.1 units per cubic centimeter of serum at 12 hours and maintain a serum level of 0.05 units per cubic centimeter for five days. Thereafter, it remains at assayable levels for 10 to 17 days. Benzathine penicillin G (Bicillin 600) has already been used and found effective in the prophylaxis and treatment of infections incident to rheumatic fever, the treatment of children with beta hemolytic streptococcic infections, and the treatment of gonorrhea.

STUDY OF FORTY-SIX CASES

A study was made of the effectiveness of benzathine penicillin G in the prophylaxis and treatment of infections requiring surgical treatment that are due to penicillin-susceptible organisms. No attempt was made to study blood levels, as this has been adequately done [1]; we attempted only to evaluate the ability of the drug to supplant multiple doses of procaine penicillin G in the treatment of surgical infections encountered in the emergency room, out-patient department, and wards of a general hospital. We had found most such infections to require two or more successive daily doses of penicillin for control. The same types of cases that would ordinarily require multiple doses of procaine penicillin were treated in this study with a single injection of 600,000 units of benzathine penicillin G. Since procaine penicillin in daily doses for several days is often used as a prophylactic measure against infection in severe burns, compound fractures, and tenorrhaphies, the new preparation was also given in these types of cases. Each patient in this series received a deep intramuscular injection of 600,000 units of benzathine penicillin G when first seen.

Method.—Only those surgical infections were treated that were thought to be due to gram-positive, penicillin-susceptible organisms. Cultures of infected tissue were taken either before or immediately after treatment in 22 cases in which there was drainage or exudate or in which incision and drainage was done. Dressings and examinations of the infected area, oral temperature readings, and, if possible, follow-up cultures were done frequently in all cases. Patients were advised to use the same supplemental measures that had been recommended with procaine penicillin therapy, such as hot applications, soaks, elevation, and rest of the affected part.

TABLE 1.—*Micro-Organisms Identified by Culture in Twenty-Two Cases*

Types of Micro-Organisms	No. of Cases
Hemolytic Micrococcus pyogenes var. aureus	7
Hemolytic Micrococcus pyogenes var. aureus and beta hemolytic streptococci	5
Hemolytic Micrococcus pyogenes var. albus	2
Hemolytic Micrococcus pyogenes var. albus and beta hemolytic streptococci	3
Hemolytic Micrococcus pyogenes var. aureus, hemolytic Micrococcus pyogenes var. albus, and beta hemolytic streptococci	2
Hemolytic Micrococcus pyogenes var. aureus and gamma streptococci	1
Alpha streptococci, beta hemolytic streptococci, hemolytic Micrococcus pyogenes var. albus, and anaerobic gram-negative rods (Bacteroides)	1
Hemolytic Micrococcus pyogenes var. aureus, Escherichia coli, and gamma streptococci	1

Results.—Of the 46 cases in which benzathine penicillin therapy was given, 33 were instances of actual therapeutic use of the drug and 13 were prophylactic. In all of the therapeutically treated cases the infection was promptly controlled. The lesions treated prophylactically, except for burns, all remained free of infection and healed by first intention. The burns promptly developed clean granulation tissue.

TABLE 2.—*Conditions for Which Benzathine Penicillin G Was Given*

Type of Lesion	No. of Patients
Therapeutic Treatment	
Cellulitis	19
Infected laceration	6
Subcutaneous abscess	4
Infected burn	4
Infected human bite	2
Furuncle	2
Pyoderma (ecthyma and impetigo) with lymphadenitis	1
Prepatellar bursitis	1
Otitis media with drainage	1
Total	33
Prophylactic Treatment	
Severe burns	7
Lacerated tendons	2
Varicella vesicles (prevention of secondary infection)	2
Gunshot wound of hand with compound fracture of metacarpal	1
Extensive laceration	1
Total	13

From the Department of Surgery, University Hospital.

The benzathine penicillin G (Bicillin 600) used in this study was supplied by Wyeth, Inc., Philadelphia.

1. Welch, H.; Randall, W. A., and Hendricks, F. D.: Serum Concentrations of Penicillin Following Administration of Various Preparations of Dibenzylethylenediamine Dipenicillin G (DBED Penicillin), Antibiotics & Chemother. 3: 1053-1062 (Oct.) 1953.

REPORT OF CASES

CASE 1.—A 51-year-old white man came to the accident room on July 31, 1953, with the complaint of having lacerated his forehead on a broken bottle two days previously. He had received no medical attention; examination revealed a grossly infected, deep laceration of the forehead with a profuse, purulent discharge. His temperature was 99.8 F. Culture of material from the wound showed beta hemolytic streptococci, hemolytic Micrococcus pyogenes var. albus, and hemolytic Micrococcus pyogenes var. aureus. Treatment consisted of the initial administration of 600,000 units of benzathine penicillin G intramuscularly, hot compresses, and insertion of drains. Temperature readings on subsequent visits were normal. Cellulitis diminished rapidly, and the wound healed in 10 days.

CASE 2.—A 29-year-old white man reported to the accident room on July 20, 1953, with the complaint of having burned his left hand five days previously. He had received no treatment; examination revealed an infected burn of the lateral surface of the left hand with an area of lymphangitis extending proximally from the first metacarpal. Culture of infected material showed hemolytic Micrococcus pyogenes var. aureus and beta hemolytic streptococci. Treatment consisted of the initial administration of 600,000 units of benzathine penicillin G, and hot soaks. On subsequent visits the burned area was seen to change from a relatively dirty surface to a clean, granulating one. Lymphangitis steadily subsided, and by July 24 the hand was essentially healed. Culture of material collected from the lesion on July 22 showed the same organisms that were found on July 20. Temperature readings after July 22 were never above 99.3 F.

A few other infections requiring surgical treatment that were treated with benzathine penicillin G responded poorly. In each of these there was a predominance of gram-negative organisms, embarrassment of circulation in the affected part, or extensive necrosis of tissue.

SUMMARY

A new, long-acting penicillin compound, N,N¹-dibenzylethylenediamine dipenicillin G (benzathine penicillin G), was found effective in the treatment and prophylaxis of infections requiring surgical treatment in 46 patients (33 treated therapeutically; 13 prophylactically). Most of these cases would ordinarily have required multiple doses of procaine penicillin.

314 Medical Arts Bldg. (1) (Dr. Yeager).

THE STARVATION STATE AND FUNCTIONAL HYPOPITUITARISM

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and
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The tendency of severe states of nutritional deficiency to alter the function of various endocrine glands has been observed in both human beings and experimental animals. The similarity of the clinical picture produced by extreme degrees of malnutrition to that following destruction of the anterior lobe of the pituitary gland continues to be a source of confusion and error in the differentiation between these two conditions. Escamilla and Lisser,[1] in their review of 595 cases of possible hypopituitary cachexia (Simmonds' disease), have commented on the frequency with which this syndrome has been mistaken for anorexia nervosa, and various laboratory tests or groups of tests have been recommended by many authors to facilitate the differential diagnosis. In order to evaluate the efficacy of such studies, an endocrine survey was performed on five selected patients with unusually severe starvation states, four of whom were comparatively young adults, and the results of the survey were compared with studies of normal controls and of nine patients with proved hypopituitarism due to destruction of the anterior pituitary (Sheehan's syndrome) (case 12), postacromegalic pituitary insufficiency (case 6), and pituitary tumor in seven cases.

REPORT OF CASES

CASE 1.—A 35-year-old white woman first had recurrent vomiting and anorexia at age 14. After her marriage at age 20 these symptoms increased in frequency and severity. A thyroidectomy performed two years later at another hospital, probably for thyrotoxicosis, resulted in some clinical improvement in the anorexia. At age 25, after a miscarriage of a 4 month fetus, the patient became almost completely anorexic. During the remaining 10 years of her life she consistently refused to take any appreciable quantity of food; a state of extreme emaciation developed, and she became amenorrheic. On one occasion she received a course of corticotropin (ACTH) therapy and at another time 12 electric shock treatments, both without benefit. During her last hospitalization in the psychiatric wards of the Philadelphia General Hospital, the patient was remarkably emaciated: weight, 56 lb. (25.4 kg.), and height, 62 in. (157.5 cm.). The skin was dry and scaly and was drawn tightly over the bones. There was a generalized major loss of subcutaneous tissue. The systolic blood pressure was 80 mm. Hg. There were contractures and edema of the lower extremities. Pubic and axillary hair was scant. Psychiatric evaluation revealed a completely immature and hysterical woman, and the diagnostic impression was anorexia nervosa. The patient was treated with cortisone and desoxycorticosterone acetate but showed no improvement in terms of weight gain or increase of strength. All attempts at refeeding were unsuccessful, and she died seven months after admission.

Autopsy findings were extreme emaciation of the body; blood vessels: minimal atherosclerosis; heart: myocardial atrophy; lungs: dependent congestion and terminal bronchopneumonia; kidneys: atrophy and reduction in number of glomeruli with generalized replacement fibrosis in cortex; spleen, gastrointestinal tract, and liver: atrophy; brain: severe cerebral edema; uterus and ovaries: atrophy; pancreas: normal size but parenchymal atrophy; thyroid gland (portion of right lobe remaining): adenomatoid nodule, otherwise normal; adrenals: normal weight, lipoid depletion present, otherwise histologically normal; pituitary: of average size and histologically normal. The diagnosis was anorexia nervosa.

CASE 2.—A 40-year-old white man was admitted to the medical service of the Philadelphia General Hospital with the history of foamy stools and anorexia of six years' duration; brownish pigmentation, beginning on the face and forehead and progress-

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From the Endocrine Clinics and Medical Wards of the Philadelphia General Hospital and the Endocrine Department of the Temple University School of Medicine.

Corticotropin (Acthar) and thyroid-stimulating hormone (Thytropar) used in this study were supplied by Armour & Co.

The persons in cases 1 and 2 were the patients of Drs. Stewart and Kremer.

1. Escamilla, R. F., and Lisser, H.: Simmonds' Disease: A Clinical Study with Review of the Literature: Differentiation from Anorexia Nervosa by Statistical Analysis of 595 Cases, 101 of Which Were Proved Pathologically, J. Clin. Endocrinol. **2**: 65, 1942.

ing to the feet and body, of 16 months' duration; occasional episodes of weakness with sweating; and four to seven light yellow, semiliquid stools per day for the past 6 months. During the past 18 months his weight had decreased from 130 lb. (59 kg.) to 78 lb. (35.4 kg.); his height was 65 in. (165.1 cm.). Physical examination revealed marked cachexia, dry skin, and brownish pigmentation that was most marked over the face, hands, and feet. The blood pressure was 100/48 mm. Hg. The remainder of the examination was normal. Pertinent laboratory findings not listed in the tables were: hemoglobin level, 4.1 gm. per 100 cc.; hematocrit, 12.9%; red blood cells, 990,000 per cubic millimeter; bone marrow, megaloblastic; calcium level, 6.6 mg. per 100 cc.; and Sulkowitch test for calcium in urine, normal. Stool examination showed a marked increase in fat, some free fat, and a predominance of fatty acid crystals. The patient was treated with cyanocobalamin (vitamin B_{12}), folic acid, and pancreatin and was discharged four months after admission, clinically improved, with a hemoglobin value of 12 gm. per 100 cc., normal red blood cell values, calcium level 10.5 mg. per 100 cc., and a total increase of 25 lb. (11.3 kg.) in weight. The diagnosis was nontropical sprue (idiopathic steatorrhea).

CASE 3.—A 27-year-old white woman had put herself on a weight-reducing diet at age 15, as a result of which her original weight of 150 lb. (68 kg.) decreased to 90 lb. (40.8 kg.); her height was 61 in. (154.9 cm.). Subsequently her weight varied little until age 20, when, following a broken romance, it decreased to 82 lb. (37.5 kg.) and remained at this figure. She gave a history of consistently inadequate food intake since her initial weight loss. Menstruation had begun at age 13 and ceased at age 18. Physical examination revealed cachexia but well-developed breasts. The blood pressure was 100/60 mm. Hg, skin and hair were rather dry, and the uterus was smaller than normal. After the studies were completed, the nature of the patient's difficulties was discussed with her over a considerable period of time, and she was encouraged to increase her food intake. No medicaments other than multivitamin tablets were used. She gained some insight into her emotional problems and at the same time began to gain weight. When her weight reached 95 lb. (43.1 kg.) she had her first menstrual period; at the time of writing she has had six regular menstrual episodes, five of which showed ovulatory temperature curves. When her weight reached 105 lb. (47.6 kg.), 18 months after the beginning of therapy, the studies were repeated for comparative purposes. The diagnosis was anorexia nervosa.

CASE 4.—A 15-year-old white girl had been moderately overweight as a child. At the time of her menarche, age 13½, a fear of becoming obese like her mother developed. Anorexia developed, followed six months later by the onset of vomiting, which occurred after almost every meal. Her weight decreased to 90 lb. (40.8 kg.); the height was 62½ in. (158.8 cm.). After three menstrual periods occurring during the first six months after her menarche, menstruation ceased completely. Physical examination was normal except for small breasts and a thyroid gland that was at the upper limit of the normal range. The patient was referred to a psychiatrist for study and treatment. The diagnosis was anorexia nervosa.

CASE 5.—A 68-year-old Negro man was admitted to the hospital because of emotional depression and refusal to eat. He weighed 103 lb. (46.7 kg.) and was 68 in. (172.7 cm.) in height. Except for marked emaciation, the physical examination was normal. A clinical diagnosis of malnutrition rather than primary endocrine disease was made because of the history of depression and food refusal, the lack of abnormal pigmentation, the ability to withstand stress as evidenced by the patient's resistance to recent past illness and exposure to cold, and the failure to respond to therapy with cortisone and thyroid. The diagnosis was depression and anorexia.

2. Perloff, W. H.; Levy, L. M., and Despopoulos, A.: The Use of Thyrotropic Hormone (TSH) in the Diagnosis of Myxedema, J. Clin. Endocrinol. **11**: 1495, 1951.

3. Jacobs, E. C.: Effects of Starvation on Sex Hormones in the Male, J. Clin. Endocrinol. **8**: 227, 1948.

4. Hultgren, H. N.: Clinical and Laboratory Observations in Severe Starvation, Stanford M. Bull. **9**: 175, 1951.

5. Lamy, M.; Lamotte, M., and Lamotte-Barrillon, S.: Glandes endocrines et dénutrition, Ann. d'endocrinol. **8**: 437, 1947.

METHODS

The laboratory tests performed on these patients were selected to measure the functional activity of the thyroid gland, gonads, and adrenal cortex. The status of the pituitary gland was gauged by the functional state of these target organs and also by direct measurement of the gonadotrophins in the urine. Thyroid function was investigated by the 24 hour I^{131} (radioactive iodine) uptake test and the ability of the gland to be stimulated by thyroid-stimulating hormone (TSH),[2] as well as the basal metabolic rate and serum cholesterol level. Urinary estrogen, 17-ketosteroid, and gonadotrophin excretion levels were used in the evaluation of gonadal activity. Adrenocortical function tests consisted of urinary corticoid and 17-ketosteroid excretion levels; the fasting blood sugar level; serum electrolyte determinations; the Kepler-Power-Robinson water excretion and blood-urine chemistry tests; the eosinophil response to stress induced by insulin, epinephrine (Adrenalin), and corticotropin; and glucose and insulin tolerance tests.

RESULTS

The patients in cases 1, 2, 3, and 5 were in a severe starvation state, due to faulty gastrointestinal absorption in case 2 and inadequate dietary intake in the others. The patient in case 4 showed malnutrition of less severity and duration than the others. The histories of the patients in cases 1, 3, and 4 are typical of anorexia nervosa, and the diagnoses were confirmed in case 1 at autopsy, performed after more than 10 years of malnutrition, and in case 3 by the marked clinical improvement of the patient after refeeding. The patient in case 2 presented a clinical history and laboratory findings characteristic of sprue; the improvement induced by specific therapy further corroborates the accuracy of this diagnosis. It should be emphasized that in patients with sprue, in spite of the frequent occurrence of pigmentation, hypotension, and weakness to a degree that sometimes causes a misdiagnosis of adrenocortical hypofunction (Addison's disease), postmortem studies have repeatedly failed to disclose any anatomic changes in the adrenal glands. The laboratory results listed below show the similarities between malnutrition and hypopituitarism.

Gonadal Function.—Decreased gonadal function is usually the earliest endocrine manifestation of inanition in both experimental animals and human beings. Anestrus is common in the female rat when the body weight decreases by more than 10%; the male rat likewise shows atrophy of testes and accessory sex organs after starvation. That these changes are secondary to a decrease in pituitary stimulation is suggested by the fact that they may be reversed by administration of chorionic gonadotrophin or pituitary implantation. Jacobs [3] reported loss of libido followed by gradual decrease of body and facial hair, thinning of axillary and pubic hair, and some degree of testicular atrophy in American prisoners of war in Japanese prison camps during World War II. These changes were all reversible after as long as 40 months of starvation. Essentially similar observations were made by Hultgren [4] and Lamy and others [5] in inmates of concentration camps who were suffering from starvation. Several authors have found decreased 17-ketosteroid

excretion in patients with chronic illness and inanition; even four days of acute starvation may lower urinary levels of ketosteroids and androgens by 50%. Both human and animal ovaries in cachexia show sparse follicles and failure of follicular development. Testes show a decrease in size, arrest of spermatogenesis, and aplasia of seminal epithelium. A reversal of these atrophic changes may occur in human beings of both sexes after a period of refeeding.

TABLE 1.—*Gonadal Function in Starvation and Hypopituitarism*

Patient	Age	Sex	Urinary Hormone Levels: Estrogens, M.U. per 24 Hr.	17-Ketosteroids, Mg. per 24 Hr.	Gonadotrophins, M.U. per 24 Hr.
Starvation					
1	35	F	13	4.9	0
2	40	M	0	6.4	108
3	27	F	0	3.2	0
4	15	F	0	5.2	0
5	68	M	..	5.2 2.6	0
Hypopituitarism					
6	26	M	13	3.6 4.1	tr.
7	64	M	13	3.4	0
8	60	F	0	...	0
9	51	M	27	12.4	tr.
10	72	M	0	0.9	0
11	57	M	0	6.0	0
12	54	F	43	...	26
13	50	F	0	4.1	>125
14	44	F	0	6.9	0
Normal range			6-50 (M) 13-133 (F)	8-20 (M) 6-15 (F)	trace-30 (M)* trace-120 (F)*

* Over 125 M.U. in primary gonadal failure.

The patients in cases 1, 3, and 4, who were all amenorrheic, had low urinary estrogen levels and no measurable gonadotrophins. These findings are in marked contrast to the high gonadotrophin levels occurring in primary ovarian failure and indicate that these patients, like those with hypopituitarism, manifest ovarian failure secondary to lack of pituitary stimulation. A similar conclusion with regard to the testicular function of the patient in case 5 may be drawn from the low 17-ketosteroid and gonadotrophin values. The low 17-ketosteroid and elevated gonadotrophin levels found in the patient in case 2 suggest primary rather than secondary testicular insufficiency. This apparent inconsistency is difficult to explain but is of help in differentiating between the starvation state and panhypopituitarism.

Thyroid Function.—The adaptation of the animal to a state of inanition is accompanied by a lowering of the metabolic rate of as much as 40%, which is accomplished at least in part by decreased activity of the thyroid gland secondary to reduced pituitary stimulation. In experimental animals findings similar to those after hypophysectomy have been noted, namely reduced thyroid activity directly proportional to reduction in weight, decreased thyrotropic hormonal blood levels, lowered I^{131} uptake, increased sensitivity to thyrotropic hormone, and return of the regressed thyroid to normal function with administration of normal amounts of thyrotropic hormone. A low basal metabolic rate is a common finding in human starvation states, and a significant rise after refeeding is usual. The histological changes in both human and animal thyroid tissue in starvation consist of decrease in height of follicular cells and increase in colloid with distension of the follicle; the gland is in a state of functional inactivity. Hypothyroidism resulting from pituitary hypofunction may be distinguished from primary hypothyroidism by the capacity of the thyroid gland to be stimulated by thyroid-stimulating hormone.[2] It is also usually characterized by an I^{131} uptake in the low normal range and a normal or only slightly elevated serum cholesterol level, in contrast to the much lower I^{131} uptake and the somewhat higher cholesterol values generally seen in primary hypothyroidism (table 2). The 24 hour I^{131} uptake of the patient in case 2 (sprue) was only 4%. In order to ascertain whether impaired gastrointestinal absorption was responsible for this low value, a tracer dose of I^{131} was administered intravenously; the same low value was recorded. The increase of the uptake to 26% after administration of thyroid-stimulating hormone indicates that the hypothyroidism was due to hypopituitarism. The borderline value of 13% noted in the patients in cases 3 and 5 is in the range found in most persons with hypopituitarism. The patients in cases 1 and 4 had uptakes of 28% and 25%, values that favor the diagnosis of starvation rather than pituitary insufficiency. The patients in cases 1, 4, and 5 had low basal metabolic rates, a frequent finding in anorexia nervosa, whereas the other two patients studied were normal in this regard. The patients in cases 1, 2, and 3 had the low cholesterol levels common in starvation; this finding is not common in hypopituitarism and constitutes an important difference between the two conditions.

Adrenocortical Function.—The adrenal cortex of the starved animal reacts by hypertrophy, followed by atrophy if the starvation is sufficiently prolonged.[6] This

TABLE 2.—*Thyroid Function in Starvation and Hypopituitarism*

Patient	Age	Sex	24 Hr. I^{131} Uptake, %: Before Giving TSH	After Giving TSH	Basal Metabolic Rate, %	Serum Cholesterol, Mg. per 100 Cc.
Starvation						
1	35	F	28	..	−18	75
2	40	M	4	26	+12	54
3	27	F	13	34	− 7	120
4	15	F	25	..	−33	210
5	68	M	13	28	−22	200
Hypopituitarism						
6	26	M	17	57	−26	228
7	64	M	10	40	−25	376
8	60	F	11	..	.....	209
9	51	M	21	..	−34	361
10	72	M	20	..	.....	250
11	57	M	8	40	−15	311
12	54	F	14	35	−16	416
13	50	F	16	36	−29	385
14	44	F	2	..	−36	384
Normal range			10-40		−15 to +15	150-300

atrophy may be reversed by refeeding or by implantation of a pituitary from a normal animal [7]; this suggests that a decrease in corticotropin production, associated with decreased secretion of thyrotropic and gonadotrophic hormones, occurs after the initial increase. By contrast,

6. (*a*) Sealander, J. A., Jr.: Effect of Environmental Temperature and Starvation on Adrenal Glands of the White-Footed Mouse, Am. J. Physiol. **163**: 92, 1950. (*b*) D'Angelo, S. A.; Gordon, A. S., and Charipper, H. A.: The Effect of Inanition on the Anterior Pituitary-Adrenocortical Interrelationship in the Guinea Pig, Endocrinology **42**: 399, 1948.

7. Mulinos, M. G., and Pomerantz, L.: Hormonal Influences on the Weight of the Adrenal in Inanition, Am. J. Physiol. **132**: 368, 1941.

no constant structural changes have been noted in the adrenal glands of starved human beings. Adrenals that are histologically normal or (as in the patient in case 1) show lipoid depletion as the only abnormality have usually been observed at postmortem examination. One patient with extreme starvation (absence of food for 60 days) did have cortical atrophy, more marked in the glomerulosa than in the fasciculata and reticularis zones [8]; this finding has also been noted in the guinea pig during starvation. In spite of the paucity of histological findings, functional hypoadrenocorticism in malnutrition has been suggested by a number of laboratory findings: low 17-ketosteroid excretion, low serum chloride level, impaired eosinophil response to stress, and blood sugar values as low as 20 mg. per 100 cc. Similar abnormalities were noted in several of the patients studied. The patient in case 4, whose malnutrition was of relatively mild degree and of shorter duration than the others', was the only one from the gastrointestinal tract. A similar explanation may apply to the patient in case 1, since gastrointestinal atrophy was observed at postmortem examination; nonendocrine factors may be responsible for the positive presumptive tests obtained in both these patients, neither of whom was able to excrete in any hour after a water load a volume greater than the night volume. The A-value, computed from electrolyte excretion as well as urinary volume, was normal in the patient in case 1 and borderline in the patient in case 2, being similar to that obtained in some of the cases with proved hypopituitarism.

The value of the glucose tolerance test as a measure of adrenocortical function is based on the ability of the adrenal steroids to maintain the blood sugar level. In adrenal hypofunction the glucose tolerance curve is flat, and hypoglycemia after three hours is common. In malnutrition the glucose tolerance curve may simulate that

TABLE 3.—*Adrenocortical Function in Starvation and Hypopituitarism*

Patient	Age	Sex	Fasting Blood Sugar, Mg. per 100 Cc.	Serum Electrolyte Values, mEq. per Liter			Kepler-Power-Robinson "A" Value	Urinary Hormone Levels, Mg. per 24 Hr.		Eosinophils per Cu. Mm. (Fasting Level)	Percentage Drop of Eosinophils with Hormone Administration			Leukocytes per Cu. Mm.	Polymorphonuclears, %	Lymphocytes, %
				Chloride	Potassium	Sodium		Corticoids	17-Ketosteroids		Insulin*	Epinephrine†	Corticotropin‡			
Starvation																
1	35	F	57	71	4.2	154	109	0.1	2.0	63	...	...	0	7,800	42	51
2	40	M	67	106	3.8	158	26	0.8	6.4	138	65	0	29	2,750	69	31
3	27	F	65	...	...	...	...	0.3	2.8	...	...	...	...	5,500	49	48
4	15	F	80	...	...	...	...	1.1	12.8	...	...	...	...	.....	...	...
5	68	M	73	105	4.4	130	...	...	5.2 2.6	106	...	...	98	.....	...	...
Hypopituitarism																
6	26	M	52	96	4.7	150	21	0.3	3.6 4.1	125	22	41	31	4,800	40	49
7	64	M	73	96	4.4	137	3	0.7	3.4	172	0	15	0	5,850	68	28
8	60	F	81	102	4.4	142	...	...	0.2	...	...	...	...	.....	...	...
9	51	M	75	105	4.9	141	...	...	12.4	85	8	...	31	6,000	58	40
10	72	M	75	...	...	...	29	0.1	0.9	94	21	...	...	8,700	54	41
11	57	M	83	96	4.4	137	22	0.9	6.0	172	0	15	0	4,200	23	66
12	54	F	92	...	4.4	137	...	0.5	3.3	256	...	41	20	.....	...	...
13	50	F	78	107	...	149	...	...	3.4	78	53	61	25	10,000	68	25
14	44	F	94	106	3.5	139	...	...	5.6	187	69	...	100	4,750	21	67
Normal range.....			90-120	97-106	4.3-5.3	128-151	Over 25	0.9-2.0	8-20 (M) 6-15 (F)	50-300	Over 50	Over 50	Over 50	5,000-10,000	40-60	20-40

* 0.1 unit per kilogram of body weight. † 0.3 mg. intramuscula... ‡ 25 mg. intramuscularly.

with normal urinary levels of corticoids and 17-ketosteroids, although she had gonadal hypofunction. This finding is in accord with the experimental evidence indicating that the onset of gonadal hypofunction precedes thyroid and adrenocortical impairment. It has been maintained by some authors that the 17-ketosteroid excretion in hypopituitary cachexia is lower than that in the starvation state. Our data confirm this observation generally, but an overlapping of levels is apparent, a fact that has been reported by others.[9]

The Kepler-Power-Robinson water excretion test was of questionable value as a measurement of adrenocortical function in case 2, since the sprue syndrome is associated with delayed water excretion due to delayed absorption of hypopituitarism or may resemble the curve of mild diabetes. Diets deficient in carbohydrates for even a few days may result in a diabetic glucose tolerance curve in normal persons. After one week of fast, lowered pyruvate and lactate levels suggest temporary inhibition of glucose oxidation. After one week of partial starvation with some glucose in the diet, however, a steep rise of blood sugar followed by an excessive fall and a rise in pyruvate and lactate indicate increased glucose oxidation with no gluconeogenesis. Chambers [10] concludes that partial inanition may result in the rapid removal of glucose by glucose-hungry tissues and a glycogen-depleted liver, while complete starvation appears to be associated with an inability of the tissues to burn carbohydrate. Chakrabarty [11] found that glucose tolerance curves of famine victims showed a slow rise for three hours followed by a considerable fall. Flat curves have been reported in some cases of anorexia nervosa, whereas in others a diabetic-like curve has been observed, followed by a precipitous fall in some. The diabetic-like curve improved in one instance after a period of refeeding.[12] Flat tolerance curves for

8. Meyers, A. W.: Some Morphological Effects of Prolonged Inanition, J. M. Research **36**: 51, 1917.
9. Sheehan, H. L., and Summers, V. K.: The Syndrome of Hypopituitarism, Quart. J. Med. **18**: 319, 1949.
10. Chambers, W. H.: Undernutrition and Carbohydrate Metabolism, Physiol. Rev. **18**: 248, 1938.
11. Chakrabarty, M. L.: Blood Sugar Levels in Slow Starvation, Lancet **1**: 596, 1948.
12. Farquharson, R. F., and Hyland, H. H.: Anorexia Nervosa, J. A. M. A. **111**: 1085 (Sept. 17) 1938.

orally administered dextrose as well as precipitously falling tolerance curves for intravenously administered glucose have been noted in sprue, so that this abnormality cannot be explained on the basis of decreased gastrointestinal absorption alone. It is evident, therefore, that the glucose tolerance curve is the result of such a complex combination of factors that, when dietary deficiencies play an important role, interpretation is often difficult. All five patients with starvation had abnormal curves: the curves for cases 1 and 4 show a slow sustained rise; those for cases 2 and 5 manifest a precipitous fall; and the curve for case 3 is moderately flat (fig. 1).

The insulin tolerance test may also be used as a measure of adrenocortical function, because when cortical activity is increased, as in adrenocortical hyperfunction (Cushing's syndrome), the patient is usually insulin resistant, whereas when cortical function is low the patient is hypersensitive to the action of insulin. In addition to the increased insulin sensitivity of the patient with adrenocortical hypofunction, which results in extremely low blood sugars, there is a delay in return to fasting values (hypoglycemia unresponsiveness). Unfortunately for the purposes of differential diagnosis, this factor may also be modified by diet. The hypoglycemia unresponsiveness observed in some cases of anorexia nervosa has been reported to be less marked than that of hypopituitary cachexia, and this has been suggested as a differential point in diagnosis. Our results do not confirm this opinion (fig. 2).

Normal or nearly normal serum electrolyte levels are noted in patients with both starvation and hypopituitarism. These findings are consequently of no help in the differential diagnosis.

Pituitary Function.—From the foregoing discussion it appears likely that any decrease in thyroidal, gonadal, and/or adrenocortical functions that may occur in inanition is secondary to pituitary insufficiency. The low urinary levels of gonadotrophins found in four of five patients (table 1) is confirmatory; furthermore, in starved animals varying degrees of pituitary atrophy have been observed, as manifested by arrest of cellular mitoses, vacuolization of the cytoplasm, loss of the staining reaction, and decrease in cells.[6b] In human beings with starvation, however, in spite of the clinical similarity of this state to hypopituitarism, structural changes in the pituitary have been either absent or minimal.[5] The patient in case 1, for example, who was extremely emaciated and who showed both clinical and laboratory evidence of marked impairment of endocrine function, nevertheless had a pituitary of normal size and structure at postmortem examination.

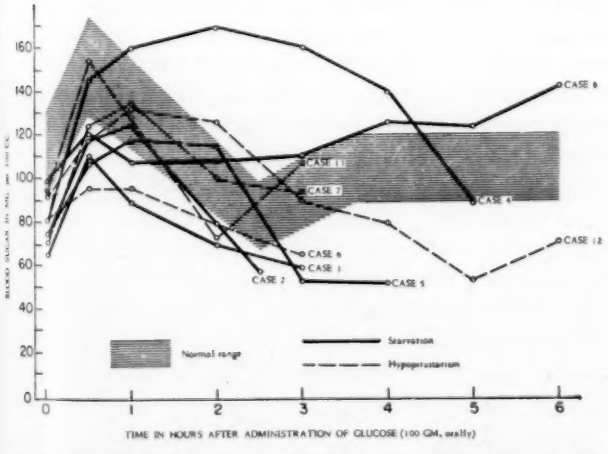

Fig. 1.—The glucose tolerance test in normal persons and patients with starvation and hypopituitarism.

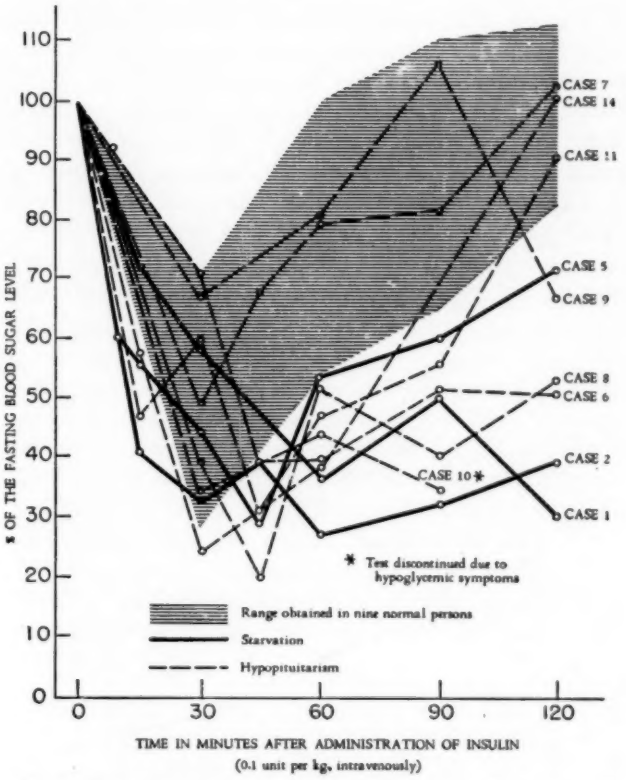

Fig. 2.—The insulin tolerance test in normal persons and patients with starvation and hypopituitarism.

The beneficial effects of refeeding are illustrated in case 3 (table 4; fig. 3). The 24 hour I^{131} uptake of the thyroid, the basal metabolic rate, the serum cholesterol level, and the urinary excretion of estrogens, gonadotrophins, 17-ketosteroids, and corticoids all returned to more normal levels; in addition, the glucose tolerance test became normal.

TABLE 4.—*The Effect of Refeeding on Endocrine Function in Anorexia Nervosa (Case 3)*

Test	Normal Range	Before Refeeding	After Refeeding
24 hr. I^{131} uptake, %.....	10-40	13	27
Basal metabolic rate, %.....	−15-+15	−7	+12
Serum cholesterol, mg. per 100 cc.....	150-300	120	180
Urinary hormone levels per 24 hr.			
17-Ketosteroids, mg.....	6-15	2.8	8.5
Corticoids, mg.....	0.9-2.0	0.3	0.8
Estrogens, M.U.....	13-133	0	27
Gonadotrophins, M.U.....	trace-120	trace	27
Weight			
Lb.	.....	82	105
Kg.	.....	37.2	47.6

COMMENT

It is clear that the functional activity of the pituitary gland may be markedly impaired by starvation. The first manifestation is commonly a decrease in activity of the gonads and thyroid, adrenocortical activity being maintained for a longer period of time. This functional hypopituitarism differs from organic hypopituitarism only in that it may be reversed by refeeding and in that recognizable structural changes in the anterior lobe of the pituitary are either absent or slight compared to those found in hypopituitary cachexia.[13] The lack of adequate and sustained response to specific endocrine therapy may offer evidence in a negative way. The distinction between these two conditions is of more than academic interest, since the treatment of the two is dissimilar. Hypopituitary cachexia usually requires endocrine replacement therapy, whereas the malnutrition state needs refeeding and perhaps psychiatric management; hormonal substances are not only of no specific value but may actually be contraindicated, as the decrease in endocrine activity appears to be an adaptive mechanism for the conservation of energy necessitated by the reduced caloric intake. Some authors have speculated whether malnutrition may eventually cause irreversible structural changes in the pituitary to develop; so far, however, this concept has not been substantiated by observation.

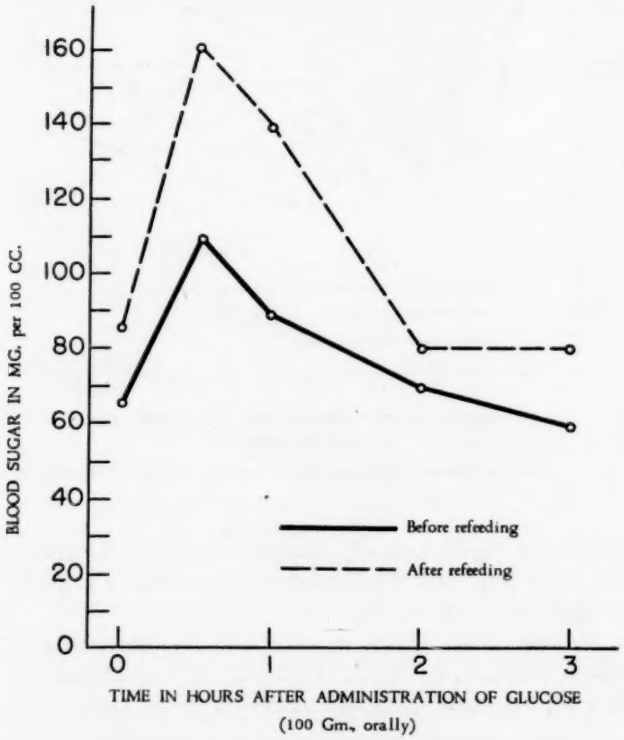

Fig. 3.—The effect of refeeding on the glucose tolerance test in the patient in case 3.

No one laboratory test or group of tests can be expected to be of definitive diagnostic significance, since one or all may be impaired in both conditions. Contrariwise, the presence of several normal studies does not necessarily rule out organic disease, as it is unusual to find all the endocrine tests impaired in patients with hypopituitary cachexia. In recent years the concept of hypopituitary cachexia as an invariably profound insufficiency of all the endocrine glands under pituitary control, such as may be noted after hypophysectomy in the rat, has been discarded.[14] Cases, both of tumerous and nontumerous origin, that manifested various combinations of hypothyroidism, hypogonadism, and hypoadrenocorticism have been observed by us and others. In addition, the various functions of the adrenal gland may not be impaired to the same extent in any one patient.[15] This interesting lack of uniformity in impairment of functions is illustrated by the tests of patients with proved hypopituitarism reported in this paper. As an example, relatively normal adrenocortical function studies were obtained in the patient in case 14 (table 3) after a "total" hypophysectomy for recurrent chromophobe adenoma. An occasional instance of complete pituitary destruction with no evidence of hypopituitarism has been reported.[16] Aside from the possibility of aberrant pituitary tissue, such findings are difficult to explain. It is interesting that some of our patients with starvation showed a greater degree of impairment of the endocrine functions than many of the patients with hypopituitarism. The differential diagnosis between these two similar conditions may, therefore, have to be made not in the laboratory but by the clinician on the basis of history, physical examination, and his considered judgment. Psychiatric investigation of the patient is extremely valuable in anorexia nervosa, although under the best of circumstances treatment is difficult. The fact that psychic disturbances ranging from apathy to frank psychoses are common in hypopituitary cachexia further complicates the problem. Such manifestations form the typical pattern of anorexia nervosa, which consists of hysterical avoidance of food and bizarre ideas with regard to eating. The normal or increased physical activity seen in anorexia nervosa, in contrast to the lethargy of hypopituitary cachexia, has long been stressed as an important differential point. Extreme emaciation, like the reverse condition of obesity, is seldom of endocrine origin; it is characteristic of anorexia nervosa and other starvation states. Many patients with hypopituitary cachexia are of normal weight, and some are actually obese. Complete loss of pubic and axillary hair is an important finding in favor of hypopituitary cachexia and is less common even in severe instances of anorexia nervosa. The ultimate diagnosis of functional hypopituitarism due to malnutrition may have to depend on long range observation and the improvement in endocrine functions subsequent to successful refeeding, the failure to improve definitively with specific endocrine therapy, or, finally, the characteristic postmortem findings.

SUMMARY

Prolonged starvation may result in functional hypopituitarism, whose differentiation from the syndrome of

13. Simmonds, M.: Ueber Hypophysisschwund mit tödlichem Ausgang, Deutsche med. Wchnschr. **40**: 322, 1914. Sheehan and Summers.[9]

14. (*a*) Sheehan, H. L.: Post-Partum Necrosis of the Anterior Pituitary, J. Path. & Bact. **45**: 189, 1937. (*b*) Sheehan and Summers.[9]

15. Lasché, E. M., and Perloff, W. H.: Clinical Signs and Symptoms in Four Cases of Hypopituitarism with Autopsy Findings, J. Phila. Gen. Hosp. **2**: 121, 1951.

16. Escamilla and Lisser.[1] Sheehan.[14a]

hypopituitary cachexia due to structual impairment of the anterior pituitary gland (Simmonds' disease) is at times extremely difficult even when the accepted laboratory tests for endocrine adequacy are performed. The diagnosis may, therefore, have to be reached by careful clinical history, physical examination, and considered clinical judgment. The ultimate diagnosis of functional hypopituitarism due to malnutrition rests on reversal of endocrine insufficiency if the patient can be successfully refed, on the failure to improve with specific endocrine therapy, or, finally, on the paucity of structural changes found in the pituitary and adrenal glands at postmortem examination.

1930 Chestnut St. (3) (Dr. Perloff).

PHYSICIANS BEHIND THE IRON CURTAIN

Walter Henry Nelson, New York

The Communist rulers of Central and Eastern Europe have for many years boasted of their medical services, claiming that all past "injustices" have been eliminated and asserting that the general standard of health throughout the Soviet-run area has been immeasurably raised. A study by the Free Europe Committee, Inc., as recently revealed in the committee publication *News from Behind the Iron Curtain,* shows that these claims are composed almost entirely of fiction, flourish, and falsehood. Administratively, medicine behind the Iron Curtain is based entirely on the Soviet model, in which all medical and dental personnel are relegated to the status of state employees whose places, hours, and conditions of work, as well as salaries and promotions, are decided by the state. The Communists' statistics hide the heart of the problem—the human aspect of medicine—the question whether a physician can serve both state and patient when the interests of each are diametrically opposed.

THE FATE OF INTEGRITY

Under Soviet rule, the prime aim of the new governments in satellite Europe is the conversion of their countries into powerful arsenals to be used as instruments of worldwide Soviet power policy. Plans are drawn up, definite goals are set, and nothing is permitted to hamper their realization. As state employees, it is the physicians' function to further these plans and to consider their worker-patients as economic factors, precious only to the extent to which their sound condition relates to plan-fulfillment. The physician's task, as defined by *Szabad Nep,* official Budapest organ of the Communist party, on Sept. 21, 1953, is as follows: "A physician must display a firm attitude toward those who try to take advantage of the doctor's good will and seek to enlist his humanity to gain additional time off or allowances for feigned illnesses." Businessmen in capitalist countries predetermine a fixed rate of depreciation in the value of their equipment. Under Soviet-sphere state capitalism, plant physicians, acting almost as plant accountants, predetermine the number of persons entitled to be sick. Under such a system, a worker is not sick when he feels sick nor when the physician thinks he is. Stringent orders regulating diagnostic criteria show that in Poland, for example, no factory worker with a temperature below 101 F can be certified sick. Furthermore, the patient's temperature must match the nature of the complaint; for influenza, for instance, it cannot be below or above 101 F. If it is, then the physician must charge the worker with malingering or "change" the illness to conform to specifications. Physicians are afraid to grant sick leave to too many persons, for this would tend to show that they were not taking sufficient care of the workers' health. Yet poor diet, constant nervous tension, and excessively high work norms make adequate care difficult.

Essentially, physicians who seek to survive must compromise their professional integrity—if they have any integrity left to preserve; for many of the physicians who have been trained since the Communists came into power are, first and foremost, members of the Communist party or sympathizers who regard the concept that the patient's welfare is paramount as just another symptom of Western "decadence." Scientific objectivity can easily be sacrificed when the doctor is a physician last and a "New Soviet Man" first.

POLITICOMEDICAL EDUCATION AND SCIENCE

Medical students are accepted by schools in Soviet-run Europe on the basis of class origin and political reliability. As a former lecturer of a Hungarian medical school recently told Radio Free Europe correspondents, medical students who have failed in the compulsory study of the Russian language and of basic military principles cannot proceed with the rest of their courses. "Medical students," the lecturer reported, "are not free to choose specialized branches of a profession according to their preferences. The Five-Year Plan predetermines the types of physicians needed in various parts of the country, and each year the Cadre Committee selects students accordingly." Throughout the whole of his university life, the medical student—and every other student—is subjected to a political program and a spy system that jeopardize his future. Examinations dealing with his political reliability and denunciations by student agents of the Communist party can both end his career. As a result of this political conditioning, physicians who were trained before the war are sharply separated from the more recent graduates. The former regard the latter as fanatical charlatans, and in that judgment they seem to be backed by most of the people. A Bulgarian who escaped from the Soviet sphere has told Radio Free Europe that the best way to recommend a physician in Sofia these days is to say that he is of prewar academic vintage.

Medical science has been corrupted by the rejection of a great deal of Western practice, research, and experience and the simultaneous, indiscriminate adoption of Soviet Russian tactics, which further widens the gulf

Director, Magazine Information, the American Heritage Foundation.

between the new physician and the old. The study of Freud's methods, for example, is forbidden, and only Pavlov is recognized; Freudian theories are characterized by the Czechoslovak ministry of education as "weapons in the hands of American warmongers." This often places physicians in awkward situations. Having achieved good results in treatment based on Western methods, they must often subsequently credit their success to some entirely different cause. Thus, many doctors behind the Iron Curtain who have not been able to make the switch with sufficient alacrity are severely attacked by the Communists. Communist Poland's newspaper, *Trybuna Ludu,* charges that "the fight waged on these old reactionary [medical] theories so far has not been fierce enough." Sometimes, however, the new era's politicomedical voodooism is not enough. Then old and elementary principles, long known and applied throughout the world, are suddenly introduced in the satellite countries with a gigantic "Made in Russia" tag attached, as in the following typical examples. The Brno, Czechoslovakia, publication *Rovnost* of July 11, 1953, credited Pavlov with inspiring a system "originated" in the Soviet Ukraine that was effective in Czechoslovakia. "The main emphasis," the publication says, "is in the close cooperation between medical workers and patients. The latter are made to participate actively in the treatment . . ." On Aug. 18, 1953, Radio Prague threw new light on the "wonder" treatment: "The State Mental Center in Dobrany began to apply with good results the methods of socialist treatments. The Pavlov groups are of greatest help in this treatment. The experience of the [Soviet] hospital is systematically applied: All doctors and nursing personnel put the greatest emphasis on the patients' environment. Pictures, floral decorations and absolute cleanliness in the wards help in the treatment." This verbiage throws light on the sterility, the abject conformity and dreary automatism characteristic of medicine in Soviet satellite states. Free inquiry, initiative, and ingenuity have been largely stifled. Instead, dusty theoretical works from the past are brought back to life, mainly because they happen to reflect a 19th century mechanistic determination that can be made to fit into the pseudopoliticophilosophical framework of present-day "theory." Quackery and political invocation often replace past academic standards. A Bucharest publication stated, in March, 1953: "Stalin's genial ideas have been and will remain the basic principles of medical scientific activities in our country . . ." As a result of such politically ordained quackery, the satellite press continuously attacks a situation that the Communist regime itself has created: "blunders in diagnostic techniques." Naturally, the blame is fixed on the physician and not on the training and political influences to which he is subjected. The satellite press even attacks physicians for their bedside manners, also a result of Iron Curtain influences. Physicians there lack humility and a sense of respect for the individual and often are brutal and insulting.

EFFECTS OF NATIONALIZATION

State medicine in Soviet-dominated Central and Eastern Europe does not compare with the various schemes of "socialist medicine" adopted in some Western countries. In the free world, the people retain their democratic privilege of freely electing officials on all levels of national life. No such safety valve exists behind the Iron Curtain. With nationalization forced on the people, physicians and patients found that there was nothing they could do but comply. Nationalization has brought a medical bureaucracy into being. A great deal of the physician's time is spent in complicated clerical work, and as a result he finds it difficult to schedule his activities to best advantage. State mismanagement creates additional woes. Budapest's *Magyar Nemzet* stated on Dec. 6, 1953, that physicians often have "to travel several kilometers between hospitals and offices. The district physician is often on duty 36 hours at a stretch. In some districts he is responsible for eight to ten thousand people . . . in Budapest the Peterffy Sandor street Center takes care of a quarter million people." One patient, according to the same article, had to travel 42 km. to the city because "that is where he now belongs." On getting there, the man was given a few slips of paper and sent to travel once more, "in order to be examined in various distant parts of the city." Sometimes the situation is reversed, and it is the physician who cannot reach his patients. Here again, the snag is traceable to government interference, negligence, or plain incompetence. Enormous obstacles of bureaucratic pettiness lie between the physician and the patient. Some official may forget—or refuse—to provide health centers with cars; too many people may be assigned to any one center; drugs and medical supplies, when not totally lacking, may be at the wrong place at the wrong time.

Private Practice.—While physicians are officially allowed to practice privately, few do so, because they first have to fulfill an exhausting day's work in state institutions, because taxes on private earnings are exorbitant, and because few persons in the impoverished population can pay for private consultation. With the average daily income of a peasant member of a collective farm (50% of Bulgaria's population) amounting to 6 *leva* (about one dollar), few patients can afford the officially fixed physician's fees of 8 *leva* for a private visit to the physician's office, 10 for a visit to the patient's home, and 30 for a specialist's consultation. Aside from these considerations, physicians are deterred from private practice by the realization that the state is suspicious of all activity beyond its direct control. Private professional life is only tolerated, not encouraged. That it is tolerated at all is explainable in terms of the hierarchy's concern for its own health. Communist bosses hesitate to patronize the state institutions, the conditions of which they know only too well. The few physicians who work for officials of the Communist party, highly paid technicians, and bureaucrats earn a good living behind the Iron Curtain. The average physician, with only his salary to rely on, gets about as much as a skilled worker.

THE COMMUNIST STATISTICAL ILLUSION

An analysis of the previously mentioned Communists' statistics is pertinent. The Polish Communists claim that, while there were 100,000 cases of syphilis in the country in 1947, by 1951 the figure had dropped to 3,500. The Bulgarian government, on the other hand, has released no figures on the incidence of tuberculosis in that country; yet, refugees estimate that about half the population is

affected. In the bright corner of the picture Communists include the number of new physicians graduated annually. Undoubtedly, their number is increasing, but it was so before the Communists took over. In the years between 1933 and 1938 Poland, for example, nearly doubled the number of her physicians (from 6,850 to 12,817). Considering that the country was then emerging from 123 years of foreign rule and neglect, the effort was considerable. The Communist achievement, though tangible in view of the wartime decimation of the country's medical forces, is by no means outstanding. Information derived from Communist sources states that there are now 13,500 Polish physicians. Czechoslovakia fared somewhat better, with the Communist administration claiming 14,000 physicians as compared to 12,000 before the war. Compared with the population reduction from 15 million inhabitants in pre-Munich days to the present 12 million, this represents a fair relative increase. Hungary, on the other hand, lags behind. Though the number of universities in that captive nation has increased from 6 to 13, the number of medical schools has remained the same. While 12.4% of the student body were medical students in 1937-1938, by 1951-1952 this proportion was down to 8.8%. Absolute figures are not available for recent years, but, according to latest Communist information, Hungary had 9,589 physicians in 1949, compared to 10,590 in 1938. Communist propaganda's statistical fairyland must be viewed against the deteriorating health standards imposed by Soviet demands on the satellite nations, demands that relegate the public welfare and the production of medical supplies to second or third place. A candid appraisal of what the figures really mean was made by the Polish Minister of Health, Jerzy Sztachelski, as reported by *Nowe Drogi* (Warsaw) in October, 1953. "Our present achievements in the health service field are primarily quantitative, in figures. We have told the people of our achievements by quoting numbers. We must remember that a rapid development and distribution of medical services entails a potential danger of bureaucratism and superficiality of the work performed."

That this danger is not potential but a stark reality is clear to those experts at the Free Europe Committee and Radio Free Europe whose daily task it is to sift through the morass of Communist mumbo-jumbo for the facts. The Communist statistical illusion is almost convincing in its dramatic interest, but, like a movie set, it is cheap and frail, all front and empty inside. A description of a Bulgarian hospital, entitled "The Unfinished Symphony," and appearing in a 1953 issue of the Sofia weekly *Sturshel,* revealed catastrophically bad conditions existing in the Pavlov General Hospital in Sofia. No heat, incredible plumbing, no elevator, little furniture, a leaky roof, stuck windows, overflowing toilet bowls, unplastered walls, and stairs without parapets—all these are cited as conditions here and in other Bulgarian institutions. Such discomforts are not shared equally by all persons. Far from intending to bring about the "equality" that it does propose, Soviet-style medicine serves to further an intentional stratification enabling the rulers to favor their friends and doom their opponents. In Czechoslovakia, for example, certain classes of citizens suffering from such major diseases as tuberculosis, cancer, and circulatory disorders receive "special" treatment; bearers of state awards, "shock" workers, and functionaries head the list. The decree that stipulates this, published in the *National Insurance Gazette* of Nov. 15, 1953, illustrates the general principle in force in all the satellite nations: medical aid is made available in proportion to the patient's contribution to the aims of the ruling hierarchy, and only incidentally according to actual needs in purely medical terms.

CRUSADE FOR FREEDOM

In the light of the foregoing facts, it appears that the "new" Communist medical services compound injustice, restrict the right to health, take away all benefit to physician and patient alike, and enable the state to decide who will be rewarded with the gift of good health. Recognizing these facts, the Free Europe Committee's Radio Free Europe, publicly supported through the Crusade for Freedom, inaugurated programs specifically aimed at physicians in satellite nations, programs that apprise them of medical advances in the free world and aid them with advice on how better to serve their patients under state restrictions. In doing so, Radio Free Europe carries out the mandate given it. In the words of R. F. E.'s director, Robert Lang, this is "to convince the Iron Curtain peoples that they not only are not forgotten, but that America is behind their just desires." Mr. Whitney Shepardson, president of the Free Europe Committee, R. F. E.'s parent organization, stated that it was the committee's mandate "to take positive and effective action against the Soviet enslavement of the people of the European satellite countries where men and women and children are compelled to live under inhuman conditions of force and fear." When the American Medical Association solidly endorsed the 1954 Crusade for Freedom drive, recently ended, it no doubt had in mind the plight of its Iron Curtain colleagues and realized the necessity for keeping alive their determination to be free once more, a determination that can do much to unsettle the Soviet position in the captive states and thus help to avoid a third world war.

345 E. 46th St. (17).

Notes on Abdominal Conditions.—In examination of the abdomen careful inspection is probably, of all the methods employed, the most frequently neglected; and yet it is often the most profitable. It should be carried out from the side of the bed, from the head, from the foot, and, unless the case be an acute one, with the patient standing up.

Tympanites, both gastric and intestinal, is sometimes caused by chronic alcoholism. The condition may become so marked after an extra bout of drinking as to raise the question of intestinal obstruction. There is scarcely anything within the abdomen that may not share in a severe enteroptosis; even the abdominal aorta may be freely movable and considerably displaced.

Congestion of the liver in dilatation of the heart may be a more acute affair than is sometimes realized. It may lead to such rapid enlargement of the organ, and may cause so much pain and tenderness, that the condition comes to simulate an acute inflammation. It may even lead to puncture or to an exploratory laparotomy, in the belief that the patient is suffering from hepatic abscess.—Lord Horder, M.D., Clinical Notes: On Some Abdominal Conditions, *Medicine Illustrated,* August, 1953.

THE RELATIONSHIP BETWEEN HUMAN SMOKING HABITS AND DEATH RATES

A FOLLOW-UP STUDY OF 187,766 MEN

E. Cuyler Hammond, Sc.D.
and
Daniel Horn, Ph.D., New York

The study described here was undertaken for two reasons. One reason was to ascertain whether smoking has an influence on death rates from lung cancer. The other reason was to ascertain whether smoking has an appreciable influence on the over-all death rate and, if so, what diseases are involved. The plan was to obtain smoking histories on a very large number of persons; to follow them for from three to five years; to ascertain the causes of death of those who died; and, finally, to correlate the mortality data with the previously obtained smoking histories. It was decided to limit the study to white men between the ages of 50 and 69, because this is the group in which the majority of deaths from lung cancer occur.

It was anticipated that the men would have to be followed for at least three years before an accurate estimate could be made of the extent of the association between smoking habits and lung cancer death rates. At the present time, most of the men have been followed up for only about 20 months. Therefore, the findings in respect to the degree of association should be considered preliminary. It can no longer be doubted that an association exists between smoking habits and lung cancer death rates.

An analysis of information now available indicates that the over-all death rate, the death rate from diseases of the coronary arteries, and the death rate from cancer are much higher among men with a history of regular cigarette smoking than among men who never smoked. The present report is concerned with these findings.

SMOKING QUESTIONNAIRE

The first step, undertaken in the summer and fall of 1951, was to design a smoking questionnaire that would yield reliable information under field conditions. A number of alternative forms were drawn up and tested. The one finally selected for use was the four page booklet shown in table 1. The first page contains general questions and was designed so as to start the subject thinking about his own smoking history. The second page has detailed questions on present and past cigarette smoking habits. The third and fourth pages have parallel questions about cigar and pipe smoking. Before being used, this questionnaire was pretested, first in the hands of paid professional interviewers and second in the hands

From the Statistical Research Section, Medical and Scientific Department, American Cancer Society, New York.

A condensed version of this paper was read in the General Scientific Meetings at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 21, 1954.

Lawrence Garfinkel, M.A., Constance L. Percy, M.S., and Leonard Craig, M.A., assisted in this study.

Aid in this study was given by volunteer researchers and subjects; county, division, and national office personnel of the American Cancer Society; state departments of health; and private physicians.

TABLE 1.—*Smoking Questionnaire*

Page 1

Division No.:..... Area No.:..... Group No.:.....

Unit No.:..... District No.:..... Researcher No.:.....

Researcher's Name..... Case No.:.....

Dear Sir:

This is a study of differences in health between nonsmokers and smokers. From time to time all sorts of claims have been made as to the effects of smoking on health. Many of these are poorly founded. We hope to determine statistically the effects of smoking in a group of men 50 years of age and over. Thank you for your cooperation.

AMERICAN CANCER SOCIETY

Your Name..... Date.....

Address ..... (Street) (City) (State)

How old are you? 50-54 ☐ 55-59 ☐ 60-64 ☐ 65-69 ☐

READ QUESTIONS CAREFULLY BEFORE CHECKING ANSWERS

A. Have you ever done smoking of any kind? Yes ☐ No ☐
(IF "YES") For how many years have you smoked? Enter no. of years .....

B. During your entire life

	Yes	No	
Have you ever smoked at least as many as 5 to 10 packs of cigarettes?	....	....	(check Yes or No)
Have you ever smoked at least as many as 50 to 75 cigars?	....	....	(check Yes or No)
Have you ever smoked at least as many as 3 to 5 packages of pipe tobacco?	....	....	(check Yes or No)

If your answers to the 3 types of smoking in question B are all "No," we need no further information.

However, if any answer has been "Yes," please answer the questions on the following pages.

Page 2

CIGARETTE SMOKING

(IF MORE THAN 5 TO 10 PACKS OF CIGARETTES SMOKED DURING YOUR LIFETIME, COMPLETE THIS PAGE ON CIGARETTE SMOKING HABIT.)

1. At the present time, how much cigarette smoking are you doing? (Check One)

None .....
Smoke cigarettes once in a while but not every day .....
Regularly smoke cigarettes, but less than ½ pack a day .....
Regularly smoke from ½ to 1 pack of cigarettes a day .....
Regularly smoke more than 1 pack but less than 2 packs of cigarettes a day .....
Regularly smoke 2 or more packs of cigarettes a day .....

2. If you do not smoke cigarettes now, how long has it been since you last smoked them? Enter Years.....
3. How old were you when you first smoked cigarettes? Enter Age .....
4. How many years altogether have you, or did you smoke cigarettes? Enter Years.....

5. Thinking back over the years you smoked, No. of Years

For how many of those years did you smoke cigarettes occasionally, but not every day? .....
For how many of those years did you regularly smoke cigarettes, but less than ½ pack a day? .....
For how many of those years did you regularly smoke from ½ to 1 pack of cigarettes a day? .....
For how many of those years did you regularly smoke more than 1 pack but less than 2 packs of cigarettes a day? .....
For how many of those years did you regularly smoke 2 or more packs of cigarettes a day? .....

Total .....

Page 3

CIGAR SMOKING

(IF MORE THAN 50 TO 75 CIGARS SMOKED DURING YOUR LIFETIME, COMPLETE THIS PAGE ON CIGAR SMOKING HABIT.)

1. At the present time, how much cigar smoking are you doing? (Check One)

None	.....
Smoke cigars once in a while but not every day	.....
Regularly smoke 1 to 2 cigars a day	.....
Regularly smoke 2 to 4 cigars a day	.....
Regularly smoke 4 to 8 cigars a day	.....
Regularly smoke 8 or more cigars a day	.....

2. If you do not smoke cigars now, how long has it been since you last smoked them? Enter Years.....
3. How old were you when you first smoked cigars? Enter Age .....
4. How many years altogether have you, or did you smoke cigars? Enter Years.....

5. Thinking back over the years you smoked,

	No. of Years
For how many of those years did you smoke cigars occasionally, but not every day?	.....
For how many of those years did you regularly smoke 1 to 2 cigars a day?	.....
For how many of those years did you regularly smoke 2 to 4 cigars a day?	.....
For how many of those years did you regularly smoke 4 to 8 cigars a day?	.....
For how many of those years did you regularly smoke 8 or more cigars a day?	.....
Total	.....

Page 4

PIPE SMOKING

(IF MORE THAN 3 TO 5 PACKAGES OF PIPE TOBACCO SMOKED DURING YOUR LIFETIME, COMPLETE THIS PAGE ON PIPE SMOKING HABIT.)

1. At the present time, how much pipe smoking are you doing? (Check One)

None	.....
Smoke a pipe once in a while but not every day	.....
Regularly smoke a pipe but less than 5 pipefuls a day	.....
Regularly smoke from 5 to 10 pipefuls a day	.....
Regularly smoke from 10 to 20 pipefuls a day	.....
Regularly smoke 20 or more pipefuls a day	.....

2. If you do not smoke a pipe now, how long has it been since you last smoked a pipe? Enter Years.....
3. How old were you when you first smoked a pipe? Enter Age .....
4. How many years altogether have you, or did you smoke a pipe? Enter Years.....

5. Thinking back over the years you smoked,

	No. of Years
For how many of those years did you smoke a pipe occasionally, but not every day?	.....
For how many of those years did you regularly smoke a pipe but less than 5 pipefuls a day?	.....
For how many of those years did you regularly smoke from 5 to 10 pipefuls a day?	.....
For how many of those years did you regularly smoke from 10 to 20 pipefuls a day?	.....
For how many of those years did you regularly smoke 20 or more pipefuls a day?	.....
Total	.....

of volunteer workers of the American Cancer Society in York, Pa. These tests indicated that it was highly satisfactory for the purpose at hand.

PROCEDURES

Three hundred ninety-four counties were selected as study areas on the basis of population and the availability of a nucleus of well-organized volunteers to carry out the field work. These counties are located in 10 administrative divisions of the American Cancer Society; namely, New Jersey, Pennsylvania, New York, Michigan, southeastern Michigan, Illinois, Wisconsin, Minnesota, Iowa, and California. The study areas varied from very large cities to small towns and farming districts.

Beginning in November, 1951, over 22,000 volunteers, many of whom had worked on other projects for the society, were recruited and trained as researchers for the study. The key volunteer leaders and many of the individual researchers were given verbal instructions by members of our office or by division office personnel as well as written instructions. Slightly different procedures from those described here were used in some areas, but the same smoking questionnaire was used in all instances. The volunteer researchers were then organized in groups, usually of 5 to 15 persons, and a chairman was appointed to be responsible for the work of each group. Each researcher was given a packet containing 11 questionnaires and a set of instructions. She was then instructed to ask 5 or 10 men (or more if possible) to fill out smoking questionnaires. They were all to be white

TABLE 2.—*Follow-Up of Men Interviewed*

American Cancer Society—Research Study on Smoking (Form 3)

Researcher's Name: .....

Address: .....

Telephone: .....

Substitute's Name: .....

Address: .....

Telephone: .....

Division No.:..... Area No.:..... Group No.:.....

Unit No.:..... District No.:..... Researcher No.:.....

Date of Follow-up Report:

Case No.	Name and Address	Check One for Each Man: Alive	Dead	Don't Know	If dead, enter date and place of death. If man has moved, enter his new address.
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....

men between the ages of 50 and 69. It was emphasized that the researcher would have to report on them annually and, therefore, that she should ask the cooperation only of men with whom she expected to be in contact for the next several years.

The names and addresses of all the men questioned by each volunteer were entered on a follow-up report form, four copies of which were prepared immediately (table 2). The follow-up form also carried the name and address of the researcher and a substitute. The completed smoking questionnaires were then forwarded to us while the follow-up forms were retained in the field for future use. The actual questioning of men began in January, 1952, and was largely completed by the end of May; but in a few counties it continued through the summer and fall of that year.

The first follow-up was started on Nov. 1, 1952. Each researcher was given a follow-up form with the names of the men she had previously given a questionnaire. For each man on her list, she was asked to check "alive," "dead," or "don't know." If the man had died, she also recorded the date and place of death. The group chair-

man, county chairman, and division office personnel made an attempt to trace all men checked "don't know" by the researcher. They were successful in a large proportion of cases. In some instances, the original researcher was unavailable, and in such cases a substitute or the group chairman filled out the follow-up form.

When the volunteers had completed their work, the state health department was asked to supply either an abstract or a photostatic copy of the death certificate of each man reported as having died. In all instances in which cancer was recorded any place on the death certificate, an attempt was made to obtain further details on the case from the physician who signed the death certificate or from hospital, tumor clinic, or cancer registry records when available. The second follow-up was started on Nov. 1, 1953, and was carried out in the same way.

POPULATION STUDIED

A total of 204,547 smoking questionnaires were collected by the volunteers. Of these, 1,280 turned out to be duplicates (i. e. two questionnaires from the same man), and 4,805 were filled out by persons other than white men aged 50 to 69, leaving a net total of 198,462. In order to make the sample more homogeneous in time relationships, it was decided to limit the present analysis to the 192,174 men questioned between Jan. 1 and May 31, 1952. In coding, it was found that 2,040 of the 192,174 questionnaires were too incomplete or confused to be used; this left 190,134 men with usable smoking questionnaires. Of these, 187,766 (98.8%) were successfully traced through Oct. 31, 1953. A total of 4,854 (2.6%) of them were reported as having died up to that date.

SMOKING HABITS

For purposes of this analysis, the 187,766 men were first divided into the following groups according to their smoking habits:

Never Smoked.—Men who checked "no" for question A on the first page of the questionnaire and those who checked "yes" for the same question, but said that never in their lives had they smoked as many as 10 packs of cigarettes, 75 cigars, or 5 packages of pipe tobacco, were included in this group.

Occasional Only.—Men who checked "yes" to question A, but on pages 2, 3, and 4 of the questionnaire indicated that they had never smoked more than occasionally, comprised this group. There were too few men in this group to divide them further according to type of smoking for this analysis.

Regular Smokers.—Men who smoked regularly or had done so at some time during their lives were included in this group. The regular smokers were further subdivided into seven groups according to the types of smoking they had done regularly. If a man said that he

TABLE 3.—*Distribution of Population by Type of Smoking (Lifetime History) and by Age*

Type of Smoking	Age 50-54		Age 55-59		Age 60-64		Age 65-69		Total
	No.	%	No.	%	No.	%	No.	%	
Never smoked	9,170	15.0	9,138	16.4	7,786	18.6	6,287	21.6	32,381
Occasional only	3,367	5.4	3,257	5.8	2,898	6.9	2,288	7.9	11,710
Cigars only	3,519	5.8	4,153	7.4	3,670	8.8	3,108	10.7	14,450
Pipes only	2,323	3.8	3,084	5.5	3,342	8.0	3,344	11.5	12,093
Cigars and pipes	2,057	3.4	2,433	4.4	2,582	6.2	2,238	7.7	9,310
Cigarettes only	26,365	43.2	19,832	35.5	11,660	27.8	5,907	20.3	63,764
Cigarettes and cigars	2,873	4.6	2,855	5.1	1,975	4.7	1,347	4.6	9,010
Cigarettes and pipes	8,093	13.3	7,252	13.0	5,014	12.0	2,648	9.1	23,007
Cigarettes, cigars, and pipes	3,346	5.5	3,812	6.8	2,945	7.0	1,938	6.7	12,041
Total	60,973	100.0	55,816	100.0	41,872	100.0	29,105	100.0	187,766
Subtotals:									
Noncigarette smokers (never smoked cigarettes regularly)	20,336	33.4	22,065	39.5	20,278	48.4	17,265	59.3	79,944
Cigarettes and other	14,272	23.4	13,919	24.9	9,934	23.7	5,933	20.4	44,058
All regular cigarette smokers	40,637	66.6	33,751	60.5	21,594	51.6	11,840	40.7	107,822

TABLE 4.—*Total Deaths and Death Rates* per 100,000 Population by Type of Smoking (Lifetime History) and by Age at Time of Questioning*

Type of Smoking	Age 50-54		Age 55-59		Age 60-64		Age 65-69		Total No. of Deaths
	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	
Never smoked	91	992	158	1,729	167	2,145	281	4,470	697
Occasional only	32	979	51	1,566	72	2,484	114	4,983	269
Cigars only	41	1,165	79	1,902	104	2,834	141	4,537	365
Pipes only	22	947	55	1,783	80	2,394	150	4,486	307
Cigars and pipes	18	875	51	2,096	65	2,517	80	3,575	214
Cigarettes only	431	1,635	550	2,773	504	4,322	342	5,790	1,827
Cigarettes and cigars	41	1,447	58	2,032	76	3,848	64	4,751	239
Cigarettes and pipes	130	1,606	163	2,248	169	3,371	142	5,363	604
Cigarettes, cigars, and pipes	45	1,345	86	2,276	106	3,599	95	4,902	332
Total	851	1,396	1,251	2,241	1,343	3,207	1,409	4,811	4,854
Subtotals:									
Noncigarette smokers (never smoked cigarettes regularly)	204	1,003	394	1,786	488	2,407	766	4,437	1,851
Cigarettes and other	216	1,513	307	2,206	351	3,533	301	5,073	1,175
All regular cigarette smokers	647	1,592	857	2,539	855	3,959	643	5,431	3,002

* Computed by dividing number of deaths that occurred between the time of questioning and Oct. 31, 1953, by number of men in the corresponding age-smoking-habit group. The median period of exposure to risk was about 20 months.

had smoked one type regularly, occasional smoking of some other type was disregarded. This classification was based on the lifetime history: "cigarette only"; "cigarette and cigar"; "cigarette and pipe"; "cigarette, cigar, and pipe"; "cigar only"; "pipe only"; and "cigar and pipe."

Table 3 shows the number and percentage of cases in each of these categories by five year age groups. It will be noted that smoking histories vary considerably with age. For example, 21.6% of the men in the age group 65 to 69 reported that they had never smoked as compared with only 15% of the men in the age group 50 to 54. Only 40.7% of the men in age group 65 to 69 had ever smoked cigarettes regularly, whereas 66.6% of the men in age group 50 to 54 gave such a history.

RESULTS—DEATHS REGARDLESS OF CAUSE

Table 4 shows the 4,854 deaths distributed by type-of-smoking categories and by age. Death rates were computed by dividing the number of deaths that occurred between the time of questioning and Oct. 31, 1953, by the number of men in the corresponding age-smoking-habit group, the median period of exposure to risk being about 20 months. Throughout this report, the age groups always refer to the age of the men at the time of questioning. Thus four cohorts, representing four age groups, are followed as consistent groups.

The most striking finding of this study is that men with a history of regular cigarette smoking had a much higher death rate than men who had never smoked cigarettes regularly (fig. 1). This occurred in all four age groups. The death rate in the cigarette only category was 65% higher than in the never smoked category in age group 50 to 54; 60% higher in age group 55 to 59; 102% higher in age group 60 to 64; and 30% higher in age group 65 to 69. In each age group, the difference is statistically significant, with $P = 0.001$ or less.

The death rates among men with a history of having smoked cigarettes regularly and also some other type regularly were higher than in the never smoked cate-

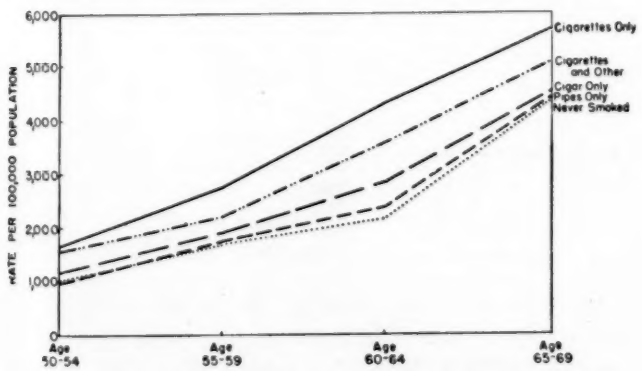

Fig. 1.—Graph showing total death rates by smoking history and by age.

gory, although they were somewhat lower than in the cigarettes only category. The difference in rates between the cigarette and other category and the never smoked category was statistically significant in all except the oldest age group.

In all four age groups, the death rates of men who had smoked only cigars regularly were slightly higher than for men who had never smoked. The difference is statistically significant in only one age group. The death rates for men who had smoked only pipes regularly were not appreciably different than for men who had never smoked.

Next, we wished to investigate the relative effect of various amounts of cigarette smoking. Men who were currently smoking cigarettes regularly at the time of questioning were classified by amount of cigarette smoking as indicated by answers to question 1 on page 2 of the questionnaire. The number of cases is shown in table 5, and the corresponding number of deaths and death rates are shown in table 6 and figure 2.

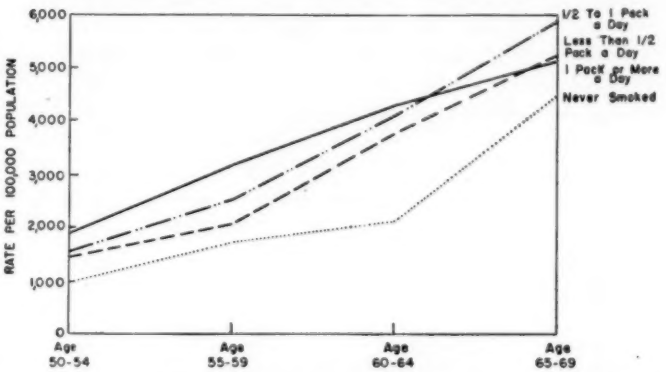

Fig. 2.—Graph showing total death rates by current amount of cigarette smoking at time of questioning and by age.

It was found that even men who regularly smoke less than half a pack of cigarettes a day had somewhat higher death rates than men who never smoked. This occurred in all four age groups. In the first and third age groups, this finding was statistically significant ($P = 0.03$ or less). Men who smoked half a pack of cigarettes or more a day had higher death rates than those who smoked less than this amount. Except in age group 65 to 69, the highest death rates were found in men who smoked a pack or more of cigarettes a day.

The large effect of heavy cigarette smoking is shown by the following comparisons: The death rate among men who smoked a pack or more of cigarettes a day was 102% higher than among men who never smoked in age group 50 to 54; 86% higher in age group 55 to 59; 108% higher in age group 60 to 64; and 21% higher in age group 65 to 69. The differences are statistically significant ($P = 0.0000001$ or less) in the first three age groups but not in the oldest age group.

A similar analysis was made after subdividing the men into two groups—those who smoked only cigarettes and those who smoked cigars or pipes as well as cigarettes. The results were about the same in these two subgroups as the results just given. However, the rates among men who had smoked only cigarettes were somewhat higher than among men who had smoked cigars and/or pipes as well as cigarettes.

Men who had never smoked cigarettes or pipes regularly but who were smoking cigars regularly at the time of questioning were classified by current amount of regular cigar smoking. The same type of analysis was made for current amount of pipe smoking. Unfortunately, the number of cases in each category of these classifications was too small to make valid comparisons at this time.

URBAN VERSUS RURAL

The Census Bureau defines as "urban" cities and towns with a population of 2,500 or more; other areas are defined as rural. For purposes of this analysis, we defined, as highly rural, counties with less than 40% of the population living in urban areas (as defined by the Census Bureau); less than 20% of the total labor force engaged in heavy industry or manufacturing; and no mining. At the other extreme, we defined, as highly urban, counties with 80% or more of the population living in urban areas and 30% or more of the total labor force engaged in heavy industry, manufacturing, or mining. By this definition, the highly urban areas in this study include Pittsburgh, Chicago, Los Angeles, Detroit, Syracuse, N. Y., Buffalo, Rochester, N. Y., etc. The highly rural areas included places such as Bayfield County, Wisconsin; Mille Lacs County, Minnesota; Mackinac County, Michigan; Cedar County, Iowa; and Ocean County, New Jersey. A total of 122 highly rural counties were included in the study area.

A total of 23,339 of the men in the study were questioned in (and presumably lived in) highly rural counties, and 39,489 of the men were questioned in (and presumably lived in) highly urban counties. Up to Oct. 31, 1953, 613 deaths were reported from the highly rural counties and 1,013 deaths were reported from the highly urban counties. Table 7 shows the distribution of population in these two groups by type of smoking and by age. In every age group, a larger percentage of men in the rural counties had never smoked and a smaller percentage had a history of regular cigarette smoking than was found in urban counties. A further study of the population revealed that, among men with a history of regular cigarette smoking, a smaller percentage smoked a pack or more of cigarettes a day in the rural areas than in the urban areas.

The populations and numbers of deaths in these two groups are of insufficient size to undertake as detailed an analysis as was made for the total population of 187,766 men. Table 8 shows a summary of death rates by broad groupings according to smoking habits. In every age group in both the urban and the rural counties, the highest death rates occurred among men with a history of regular cigarette smoking.

TABLE 5.—*Distribution of Population by Current Amount of Regular Cigarette Smoking at Time of Questioning and by Age**

Current Amount of Regular Cigarette Smoking at Time of Questioning	Age 50-54		Age 55-59		Age 60-64		Age 65-69	
	No.	%	No.	%	No.	%	No.	%
Less than ½ pack a day	4,415	14.0	4,424	17.6	3,197	20.7	2,119	25.9
½ to 1 pack a day	15,655	49.7	12,771	50.8	8,051	52.0	4,167	51.0
1 pack or more a day	11,454	36.3	7,922	31.6	4,232	27.3	1,889	23.1
Total	31,524	100.0	25,117	100.0	15,480	100.0	8,175	100.0
Never smoked	9,170	....	9,138	....	7,786	....	6,287	....

* Men who were not currently smoking cigarettes regularly at time of questioning were omitted from these data.

TABLE 6.—*Total Deaths and Death Rates per 100,000 Population by Current Amount of Regular Cigarette Smoking at Time of Questioning and by Age**

Current Amount of Regular Cigarette Smoking at Time of Questioning	Age 50-54		Age 55-59		Age 60-64		Age 65-69		Total
	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths
Less than ½ pack a day	65	1,472	91	2,057	120	3,754	111	5,238	387
½ to 1 pack a day	247	1,578	322	2,521	328	4,074	244	5,856	1,141
1 pack or more a day	218	1,903	249	3,143	182	4,301	96	5,082	745
Total	530	1,681	662	2,636	630	4,070	451	5,517	2,273
Never smoked	91	992	158	1,729	167	2,145	281	4,470	697

* Data on men who were not currently smoking cigarettes regularly at time of questioning are omitted from this table.

TABLE 7.—*Percentage Distribution of Population by Type of Smoking (Lifetime History) and by Age in Highly Urban Counties Compared with Highly Rural Counties*

Type of Smoking	Age 50-54		Age 55-59		Age 60-64		Age 65-69	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Never smoked	12.7	19.4	13.8	22.2	15.7	24.0	18.2	27.7
Occasional only	4.5	6.8	4.4	7.9	5.4	9.6	6.0	10.8
Cigars only	7.0	4.2	8.7	5.9	9.5	7.1	11.4	9.8
Pipes only	3.3	4.4	4.4	6.4	5.6	9.9	9.0	13.7
Cigars and pipes	4.1	2.1	5.0	2.9	6.8	4.9	8.2	6.0
Cigarettes only	44.9	42.4	38.5	33.2	32.0	23.3	24.5	16.4
Cigarettes and cigars	5.3	3.4	6.0	4.0	5.9	3.7	6.0	2.8
Cigarettes and pipes	12.0	13.2	11.1	13.1	10.9	12.6	8.8	8.5
Cigarettes, cigars, and pipes	6.1	4.0	8.2	4.4	8.2	5.1	8.0	4.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subtotals								
All men with history of regular cigarette smoking	68.3	63.1	63.8	54.7	56.9	44.6	47.3	32.0
1 or more packs of cigarettes a day	20.7	15.4	16.6	10.7	12.5	6.7	8.6	4.3

The most that can be said of this urban-rural analysis, considering the statistical sampling variation to which these figures are subject, is that essentially the same basic relationships are found in these two subgroups as was found in the entire population of 187,766 men. It may be possible to make a more detailed analysis of this kind after the men have been followed for a longer period of time.

ANALYSIS BY AMERICAN CANCER SOCIETY DIVISIONS

As previously described, this study is being conducted in 10 divisions of the American Cancer Society located in different parts of the country. We wished to test the consistency with which the findings held up in each of the divisions. The analysis could not be made in as great detail as for the entire population of 187,766 men because of the small numbers in many of the subgroups in individual divisions. In spite of the statistical instability resulting from small numbers, the results were remarkably consistent as illustrated by the following figures.

Although the men were not screened by medical examination (as is given to life insurance applicants), the study group was to some degree a "preferred risk" population at the start of the study. The reason for this is that the volunteers ordinarily did not enroll men in the study who were seriously ill or dying at the time; therefore, the death rates were relatively low during the first few months.

Death rates in the United States are higher in winter than in summer. The entire group of 187,766 men studied were exposed to risk for at least 17 months (June 1, 1952, through Oct. 31, 1953), and the great majority of them were exposed to risk for at least 18 months (May 1, 1952, through Oct. 31, 1953). As a generalization, May through October might be called a low death rate period, while November through April might be called a high death rate period.

The fact that the majority of the men were exposed to risk during 12 low death rate months and only 6 high death rate months tended to make the over-all death rate lower than comparable figures based on exposure to risk during a single, complete calendar year.

TABLE 8.—*Death Rates per 100,000 Population in Highly Urban Counties as Compared with Highly Rural Counties by Smoking History and by Age*

Age Group	Smoking History	Highly Urban Counties			Highly Rural Counties		
		No. of Men	No. of Deaths	Death Rate	No. of Men	No. of Deaths	Death Rate
50-54	Never smoked regularly *	2,342	21	897	1,800	22	1,222
	Pipes and/or cigars only †	1,966	20	1,017	787	8	1,085
	Cigarettes ‡	9,290	140	1,507	4,334	69	1,592
	Total	13,598	181	1,331	6,871	99	1,441
55-59	Never smoked regularly	2,186	35	1,601	2,071	26	1,255
	Pipes and/or cigars only	2,174	33	1,518	1,040	21	2,019
	Cigarettes	7,679	199	2,592	3,760	101	2,686
	Total	12,039	267	2,218	6,871	148	2,154
60-64	Never smoked regularly	1,775	35	1,972	1,836	44	2,397
	Pipes and/or cigars only	1,847	50	2,707	1,194	29	2,429
	Cigarettes	4,788	181	3,780	2,442	100	4,095
	Total	8,410	266	3,163	5,472	173	3,162
65-69	Never smoked regularly	1,315	79	6,008	1,590	68	4,277
	Pipes and/or cigars only	1,553	64	4,121	1,216	52	4,276
	Cigarettes	2,574	156	6,061	1,319	73	5,535
	Total	5,442	299	5,494	4,125	193	4,679

* "Never smoked" combined with "occasional only."
† History of regular cigar or pipe smoking but no regular cigarette smoking.
‡ History of regular cigarette smoking with or without history of cigar or pipe smoking.

In all 10 divisions in age group 50 to 54, the death rate was lower among men who had never smoked than among men who were currently smoking a pack or more of cigarettes a day. The same was true in all 10 divisions for age group 55 to 59.

In age group 60 to 64, the same was true in 9 of the 10 divisions. In the oldest age group, the usual relationship held in 7 of the 10 divisions.

ANALYSIS BY DATE OF DEATH

Death rates computed from these data are not directly comparable to death rates for the general population as reported by the National Office of Vital Statistics. There are several reasons for this.

The 187,766 men were questioned (and entered the study) over a period of five months, although the majority were questioned within a span of six weeks. This must be considered in any attempt to compare our findings with official mortality statistics.

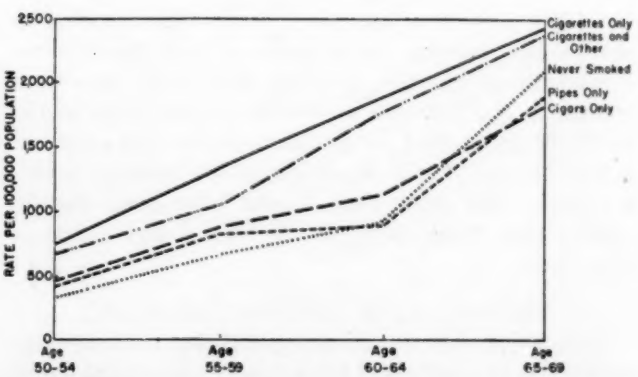

Fig. 3.—Graph showing death rates from coronary artery disease by smoking history and by age.

In planning the study, we had anticipated that deaths that occurred during the first few months would have to be excluded from the analysis in order to avoid the theoretical possibility of a bias influencing the relationship between death rates and smoking habits. In order to test for this, we have made an analysis separately for deaths that occurred in each of three six month periods (May 1 through Oct. 31, 1952; Nov. 1, 1952, through April 30, 1953; and May 1 through Oct. 31, 1953), as well as the 387 deaths that occurred prior to May, 1952. In all four periods, regular cigarette smokers had higher death rates than men who had never smoked.

Table 9 and figure 3 show the number of deaths and death rates from diseases of the coronary arteries by type of smoking and by age. Table 10 and figure 4 show the number of deaths and death rates from diseases of the coronary arteries by current amount of regular cigarette smoking at the time of questioning.

The findings for diseases of the coronary arteries in respect to regular cigarette smoking were essentially the same as for the deaths regardless of cause as previously described, except that the relationships are very much more pronounced. For example, the death rates for men who smoked a pack or more of cigarettes a day were

TABLE 9.—*Deaths from Diseases of the Coronary Arteries and Death Rates per 100,000 Population by Type of Smoking (Lifetime History) and by Age at Time of Questioning*

Type of Smoking	Age 50-54		Age 55-59		Age 60-64		Age 65-69		Total
	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths
Never smoked	32	349	63	689	69	886	131	2,084	295
Occasional only	14	429	13	399	33	1,139	44	1,923	104
Cigars only	17	483	37	891	41	1,117	56	1,802	151
Pipes only	10	431	25	811	29	868	63	1,884	127
Cigars and pipes	5	243	24	986	28	1,084	27	1,206	84
Cigarettes only	202	766	264	1,331	218	1,870	144	2,438	828
Cigarettes and cigars	15	529	32	1,121	37	1,873	33	2,450	117
Cigarettes and pipes	62	766	74	1,020	87	1,735	66	2,492	289
Cigarettes, cigars, and pipes	20	598	39	1,023	52	1,766	41	2,116	152
Total	377	618	571	1,023	594	1,419	605	2,079	2,147
Subtotals									
Noncigarette smokers (never smoked cigarettes regularly)	78	384	162	734	200	986	321	1,859	761
Cigarettes and other	97	680	145	1,042	176	1,772	140	2,360	558
All regular cigarette smokers	299	736	409	1,212	394	1,825	284	2,399	1,386

TABLE 10.—*Deaths from Diseases of the Coronary Arteries and Death Rates per 100,000 Population by Current Amount of Regular Cigarette Smoking at Time of Questioning and by Age**

Current Amount of Regular Cigarette Smoking at Time of Questioning	Age 50-54		Age 55-59		Age 60-64		Age 65-69		Total
	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths
Less than ½ pack a day	26	589	34	769	43	1,345	46	2,171	149
½ to 1 pack a day	116	741	164	1,284	157	1,950	113	2,712	550
1 pack or more a day	98	856	117	1,477	75	1,772	44	2,329	334
Total	240	761	315	1,254	275	1,776	203	2,483	1,033
Never smoked	32	349	63	689	69	886	131	2,084	295

* Data on men who were not currently smoking cigarettes regularly at time of questioning are omitted from this table.

Because of this finding, it was decided to base the present report on all deaths that occurred through Oct. 31, 1953, instead of excluding deaths that occurred in the first few months. As a matter of fact, the relationships between cigarette smoking and death rates were greater in the last two six month periods than in the earlier periods. Had we excluded deaths that occurred before Nov. 1, 1952, the relationships between smoking habits and death rates would have been slightly greater than those shown in the figures and charts in this report.

DISEASES OF THE CORONARY ARTERIES

Photostatic copies or abstracts of the death certificates have so far been obtained for 4,710 (97%) of the 4,854 deaths reported. Disease of the coronary arteries was the primary cause of death as recorded on 2,147 (45.6%) of the death certificates. In this category, we included deaths reported by the physician as being due to coronary occlusion, coronary thrombosis, myocardial infarction, or arteriosclerotic heart disease.

more than twice as high as the death rates of men who had never smoked in age groups 50 to 54 and 55 to 59

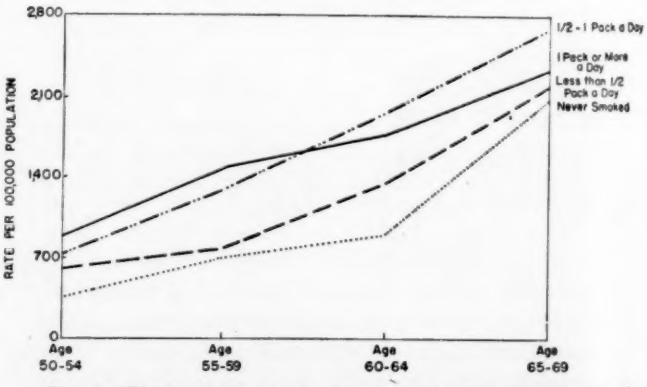

Fig. 4.—Graph showing death rates from coronary artery disease by current amount of cigarette smoking at time of questioning and by age.

and exactly twice as high in age group 60 to 64. These differences were statistically significant in each of the three age groups ($P = 0.00002$ or less). The difference

in age group 65 to 69 was smaller and not statistically significant.

CANCER

Cancer was indicated as the primary cause of death on 844 death certificates. The relationships with smoking habits are shown on tables 11 and 12 and figures 5 and 6. In all four age groups, the cancer death rates were higher among men with a history of only regular cigarette smoking than among men who never smoked. The same can be said of men with a history of regular cigarette smoking who had also smoked cigars or pipes regularly. In the two older age groups, all four comparisons just mentioned are statistically significant ($P = 0.02$ or less). In the two younger age groups, one of the comparisons is statistically significant, and the other three approach borderline significance.

Of the 844 cancer deaths, 167 were indicated on the death certificate as being due to primary cancer of the lung. We are attempting to obtain more information on the basis of diagnosis for each of these cases, but this process has not yet been completed. So far, we have information that 57 were based on microscopic evidence, and of these 5 were specified as adenocarcinoma. The evidence presently at hand does not warrant presenting the findings in any greater detail than is shown in table 13.

The lung cancer death rate was higher among men with a history of regular cigarette smoking than among men who had never smoked regularly and even higher among men who currently smoked one pack or more of cigarettes a day at the time of questioning. The differences are statistically significant ($P = 0.002$ or less). In fact, even the men smoking less than one pack of cigarettes daily have significantly higher death rates from lung cancer than those who have never smoked regularly ($P = 0.03$ or less). The best estimate that can be made at the present time (at the 5% level of confidence) is that lung cancer deaths are from 3 to 9 times as common among men with a history of cigarette smoking as among men who have never smoked regularly and that lung cancer deaths are from 5 to 16 times as common among men who smoke one pack or more per day. Another year or two of follow-up must precede estimation of the degree of the effect with more precision.

An analysis has been made of death rates for cancer of each specific site. The number of deaths in these subcategories is too small for the rates to be statistically stable. Nevertheless, the findings give the impression that, for most of the commoner sites of cancer among men, regular cigarette smokers have higher death rates than those who never smoked.

TABLE 11.—*Deaths from Cancer (All Sites) and Death Rates per 100,000 Population by Type of Smoking (Lifetime History) and by Age at Time of Questioning*

Type of Smoking	Age 50-54		Age 55-59		Age 60-64		Age 65-69		Total
	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths
Never smoked	14*	153	25	274	22	283	37	589	98
Occasional only	3	92	10	307	6	207	22	962	41
Cigars only	7	199	11	265	23	627	22	708	63
Pipes only	5	215	12	389	13	389	21	628	51
Cigars and pipes	4	195	7	288	14	542	14	626	39
Cigarettes only	66	250	101	509	99	849	68	1,151	334
Cigarettes and cigars	5	177	8	280	12	608	9	668	34
Cigarettes and pipes	22	272	34	469	31	618	25	944	112
Cigarettes, cigars, and pipes	8	239	15	394	27	917	22	1,135	72
Total	134	220	223	400	247	590	240	825	844
Subtotals									
Noncigarette smokers (never smoked cigarettes regularly)	33	162	65	295	78	385	116	672	292
Cigarettes and other	35	245	57	410	70	705	56	944	218
All regular cigarette smokers	101	249	158	468	169	783	124	1,047	552

TABLE 12.—*Deaths from Cancer (All Sites) and Death Rates per 100,000 Population by Current Amount of Regular Cigarette Smoking at Time of Questioning and by Age**

Current Amount of Regular Cigarette Smoking at Time of Questioning	Age 50-54		Age 55-59		Age 60-64		Age 65-69		Total
	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths
Less than ½ pack a day	13	295	25	565	28	876	22	1,038	88
½ to 1 pack a day	35	224	52	407	62	770	40	960	189
1 pack or more a day	40	349	51	644	46	1,087	24	1,271	161
Total	88	279	128	510	136	879	86	1,052	438
Never smoked	14	153	25	274	22	283	37	589	98

* Data on men who were not currently smoking cigarettes regularly at time of questioning are omitted from this table.

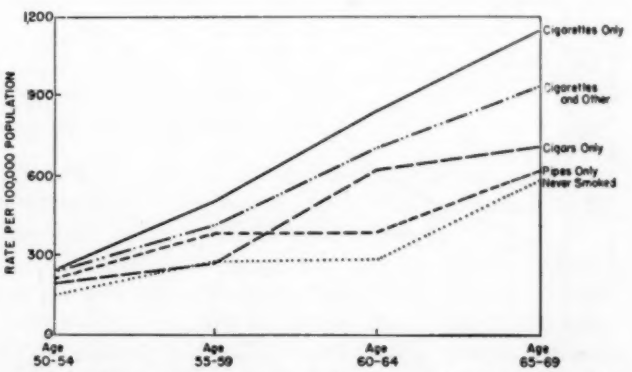

Fig. 5.—Graph showing death rates from cancer (all sites) by smoking history and by age.

Tables 14 and 15 show the findings for cancer of all sites combined, after excluding lung cancer (fig. 7 and 8). In all four age groups, regular cigarette smokers had

TABLE 13.—*Lung Cancer Death Rates by Type of Smoking and by Amount of Cigarette Smoking at Time of Questioning*

Type of Smoking	Population	All Cases Reported as Primary Lung Cancer		Microscopically Proved Lung Cancer (Excluding Adenocarcinoma)	
		No. of Deaths	Death Rate	No. of Deaths	Death Rate
Never smoked or occasional only	44,091	12	27.2	4	9.1
Cigar and/or pipe smoking but never smoked cigarettes regularly	35,853	12	33.5	3	8.4
History of regular cigarette smoking	107,822	143	132.6	45	41.7
Total	187,766	167	88.9	52	27.7
Regular cigarette smoking; less than 1 pack a day at time of questioning	54,799	62	113.1	17	31.0
Regular cigarette smoking; 1 pack or more a day at time of questioning	25,497	61	239.2	24	94.1

We are attempting to obtain information on the basis of diagnosis of all deaths in which cancer was mentioned on the death certificate. This process has not yet been completed. However, we have made a preliminary analysis on cancer deaths known to us to have been verified

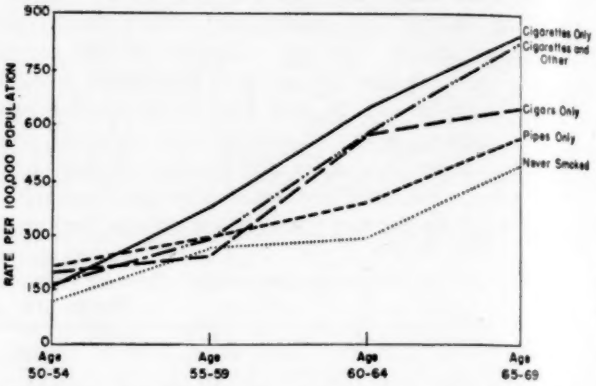

Fig. 7.—Graph showing death rates from cancer (exclusive of lung) by smoking history and by age.

TABLE 14.—*Deaths from Cancer (Exclusive of Lung) and Death Rates per 100,000 Population by Type of Smoking (Lifetime History) and by Age at Time of Questioning*

Type of Smoking	Age 50-54		Age 55-59		Age 60-64		Age 65-69		Total No. of Deaths
	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	
Never smoked	12	131	24	263	22	283	31	493	89
Occasional only	3	92	9	276	6	207	20	874	38
Cigars only	7	199	10	241	21	572	20	644	58
Pipes only	5	215	9	292	13	389	19	568	46
Cigars and pipes	4	195	6	247	14	542	13	581	37
Cigarettes only	44	167	68	343	75	643	50	847	237
Cigarettes and cigars	3	106	7	245	9	456	8	594	27
Cigarettes and pipes	17	210	23	317	26	519	21	793	87
Cigarettes, cigars, and pipes	6	179	10	262	22	747	20	1,032	58
Total	101	166	166	297	208	497	202	694	677
Subtotals									
Noncigarette smokers (never smoked cigarettes regularly)	31	152	58	263	76	375	103	597	268
Cigarettes and other	26	182	40	287	57	574	49	826	172
All regular cigarette smokers	70	172	108	320	132	611	99	886	409

a higher death rate than men who had never smoked. This difference is statistically significant in the two oldest age groups ($P = 0.0005$ and 0.01, respectively). In the age groups 60 to 64 and 65 to 69, the death rate among

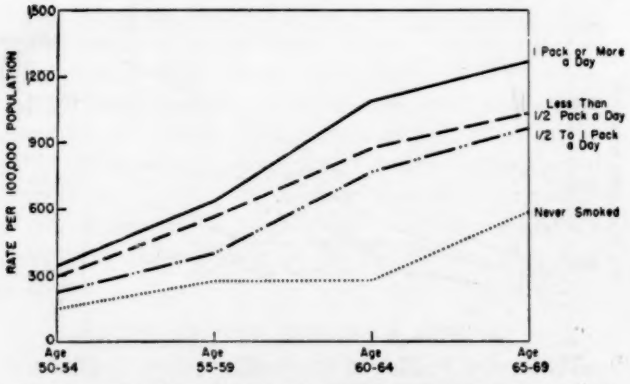

Fig. 6.—Graph showing death rates from cancer (all sites) by current amount of cigarette smoking at time of questioning and by age.

men who smoked a pack or more of cigarettes a day was more than twice as high as among men who had never smoked; both of these differences are statistically significant ($P = 0.001$ and 0.008, respectively).

microscopically. In this group, the findings were essentially the same as those described above.

At the present time it is impossible to be sure of the relationship between regular cigar or pipe smoking and cancer death rates. The rates tend to be higher than those for men who have never smoked, especially in the older age groups. There are, however, too few deaths for even borderline significance, except when all ages are combined among cigar smokers and among heavy pipe smokers (10 pipefuls or more per day). It will require at least one more year of follow-up to evaluate this relationship properly.

OTHER CAUSES OF DEATH

There are no other specific causes of death for which we have enough data at this time to warrant making any statements. There were 1,863 deaths not specifically indicated as being primarily due to either cancer or diseases of the coronary arteries. This includes 144 deaths with no death certificate information available at the present time, as well as some with the cause of death stated as being uncertain.

In this group, death rates among regular cigarette smokers were appreciably higher than among men who never smoked. This may be due to an effect of smoking

on some specific diseases other than those already considered. However, at least a part of it is probably due to some cases of coronary artery disease and cancer having been included.

OBSERVED VERSUS EXPECTED DEATHS

After finding a high association between death rates and regular cigarette smoking, we were interested to know the degree to which various diseases were involved. Table 16 shows the figures that were computed for this purpose. The method of computation may be illustrated by the following example.

TABLE 15.—*Deaths from Cancer (Exclusive of Lung) and Death Rates per 100,000 Population by Current Amount of Regular Cigarette Smoking at Time of Questioning and by Age**

Current Amount of Regular Cigarette Smoking at Time of Questioning	Age 50-54		Age 55-59		Age 60-64		Age 65-69		Total
	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths	Death Rate	No. of Deaths
Less than ½ pack a day	8	181	20	452	21	657	16	755	65
½ to 1 pack a day	29	185	38	298	52	646	31	744	150
1 pack or more a day	23	201	28	353	29	685	20	1,059	100
Total	60	190	86	342	102	659	67	820	315
Never smoked	12	131	24	263	22	283	31	493	89

* Data on men who were not currently smoking cigarettes regularly at time of questioning are omitted from this table.

TABLE 16.—*Expected* Versus Observed Number of Deaths by Cause Among Men with a History of Regular Smoking*

History of Regular Smoking	Primary Cause of Death	Observed Versus Expected No. of Deaths: Age 50-54 Observed	Age 50-54 Expected	Age 55-59 Observed	Age 55-59 Expected	Age 60-64 Observed	Age 60-64 Expected	Age 65-69 Observed	Age 65-69 Expected	Total Observed	Total Expected	Ratio
Cigarette only	Total	431	262	550	343	504	250	342	264	1,827	1,119	1.63
	Coronary †	202	92	264	137	218	103	144	123	828	455	1.82
	Cancer	66	40	101	54	99	33	68	35	334	162	2.06
	Other ‡	163	130	185	152	187	114	130	106	665	502	1.32
Cigarette plus cigar and/or pipe	Total	216	142	307	241	351	213	301	265	1,175	861	1.36
	Coronary	97	50	145	96	176	88	140	124	558	358	1.56
	Cancer	35	22	57	38	70	28	56	35	218	123	1.77
	Other	84	70	105	107	105	97	105	106	399	380	1.05
Cigar and/or pipe (never cigarette)	Total	81	78	185	167	249	206	371	388	886	839	1.06
	Coronary	32	28	86	67	98	85	146	181	362	361	1.00
	Cancer	16	12	30	26	50	27	57	51	153	116	1.32
	Other	33	38	69	74	101	94	168	156	371	362	1.02
Total with history of regular smoking of any type	Total	728	482	1,042	751	1,104	669	1,014	917	3,888	2,819	1.38
	Coronary	331	170	495	300	492	276	430	428	1,748	1,174	1.49
	Cancer	117	74	188	118	219	88	181	121	705	401	1.76
	Other	280	238	359	333	393	305	403	368	1,435	1,244	1.15
Cigarettes, 1 pack or more a day	Total	218	114	249	137	182	91	96	84	745	426	1.75
	Coronary	98	40	117	55	75	37	44	39	334	171	1.95
	Cancer	40	18	51	22	46	12	24	11	161	63	2.56
	Other	80	56	81	60	61	42	28	34	250	192	1.30

* Calculated by applying death rate of men who had never smoked to number of regular smokers exposed to risk.
† Diseases of the coronary arteries.
‡ Cases in which the cause of death is unknown to us at the present time are also included in this category.

In age group 50 to 54, there were 26,365 men with a history of regular cigarette smoking only, of whom 431 were "observed" to have died (tables 3 and 4). This "observed" number of 431 deaths is entered in the box in the upper left hand corner of table 16 under "observed." In the same age group, there were 9,170 men who had never smoked, and of these 91 died, giving a death rate of 992 per 100,000 population (or 0.992%). Applying the death rate of the group that never smoked to the number of men with a history of regular cigarette smoking only gives an "expected" number of 262 deaths ($26{,}365 \times 0.992 = 262$). This expected number is entered in the box just to the right of the "observed" number of 431 in table 16. These figures may be interpreted as follows: 431 men with a history of regular cigarette smoking only in age group 50 to 54 actually died. Only 262 would have died had the death rate in this group been exactly the same as for men in age group 50 to 54 who never smoked.

The same procedure was carried out to obtain each pair of "observed" and "expected" figures in the body of table 16. The figures in the total column at the right of the table were obtained by summing the corresponding figures for each of the four age groups.

As has been previously described, many of the comparisons varied from one age group to another. However, for the sake of simplicity, the following discussion of these figures will be limited to a consideration of the combined totals for the four age groups.

Consider first the men who were currently smoking one pack of cigarettes or more a day at the time of questioning (fig. 9). The expected total number of deaths in this group was 426, whereas 745 deaths actually occurred. The difference is 745 — 426 = 319 deaths, or an excess of 75% above the expected number ($P < 0.000000001$). For diseases of the coronary arteries, the difference was 334 — 171 = 163 deaths, or 95% above expected. ($P < 0.000000001$). For cancer, the difference was 161 — 63 = 98 deaths, or 156% above expected ($P < 0.000000001$). For all other and

unknown causes of death, the difference was 250 — 192 = 58 deaths, or 30% above expected (P = 0.01).

The total excess of 319 deaths is distributed by causes as follows: diseases of the coronary arteries 163 (51%); cancer 98 (31%); other and unspecified causes 58 (18%). Some of the deaths for which we have no death certificate at the present time were undoubtedly due to cancer or diseases of the coronary arteries, and one or

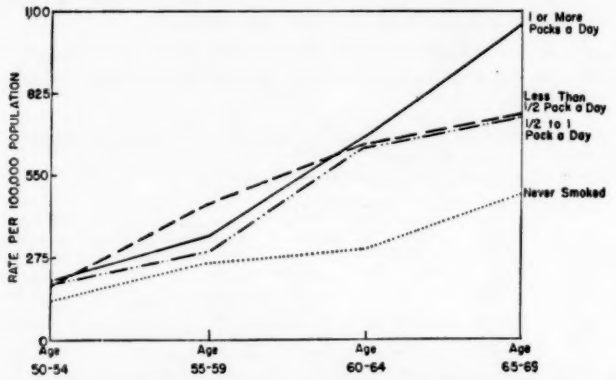

Fig. 8.—Graph showing death rates from cancer (exclusive of lung) by current amount of cigarette smoking at time of questioning and by age.

the other of these two diseases was a contributing factor in some deaths that were ascribed as being primarily due to other causes.

Among all men with a history of regular cigarette smoking only, the expected number of deaths was 1,119, the observed number was 1,827, and the excess was 1,827 — 1,119 = 708 deaths. The 708 excess deaths were distributed by cause as follows: diseases of the coronary arteries 375 (53%); cancer 172 (24%); and other and unspecified 163 (23%). Among men with a history of having smoked cigarettes regularly and also having smoked cigars and/or pipes regularly, the excess in expected over observed deaths was 1,175 — 861 = 314 deaths. The distribution by cause was diseases of the coronary arteries 200 (64%); cancer 95 (30%); and other and unspecified 19 (6%).

Clearly, over half of the excess in observed over expected deaths for regular cigarette smokers is attributable to diseases of the coronary arteries and a very large part of the remainder is attributable to cancer. From the data at present available, it is impossible to say for certain whether any other specific diseases are involved.

Next consider men with a history of regular cigar and/or pipe smoking who never smoked cigarettes regularly. The observed number of deaths was 886 compared with an expected number of 839, or an excess of only 47 deaths (6%). Of these 47 excess deaths, 37 are attributable to cancer for which the observed number of deaths was 32% higher than the expected number. This excess is statistically significant at the 0.04 level of significance.

One other fact, not shown in table 16, is worthy of mention at this point. Among all men with a history of regular cigarette smoking, the observed number of cancer deaths was 552 as compared with an expected number of 285 giving an excess of 267 deaths. For lung cancer the excess was 143 observed — 24 expected = 119 deaths. Thus, of the total excess attributable to cancer, 45% was attributable to lung cancer and 55% was attributable to cancer of other sites.

COMMENT

The following statements can be made about white men who were between the ages of 50 and 69 in the first half of 1952. Death rates from diseases of the coronary arteries and from cancer are much higher among men with a history of regular cigarette smoking than among men who never smoked. Death rates from these two causes are also much higher among men with a history of regular cigarette smoking than among men with a history of having smoked cigars and/or pipes regularly but of never having smoked cigarettes regularly. This proves that an association exists. The question now arises as to whether the association is due to a cause and effect relationship between regular cigarette smoking and death rates from these two diseases. For this, it is pertinent to examine other independent evidence relating to the subject. At the start we should say that no single piece of this other evidence is conclusive in itself. Therefore, we must consider the separate pieces in relationship to each other. If they form a reasonable pattern that is consistent with the hypothesis that the relationship is one of cause and effect, then this hypothesis should be accepted unless and until even better proof is presented in support of some alternative hypothesis that is consistent with all of the known facts. In 1928, Lombard and Doering [1] made an analysis of records collected by the Visiting Nurse Association and found heavy smoking to be commoner among cancer patients than among persons in the control group. In

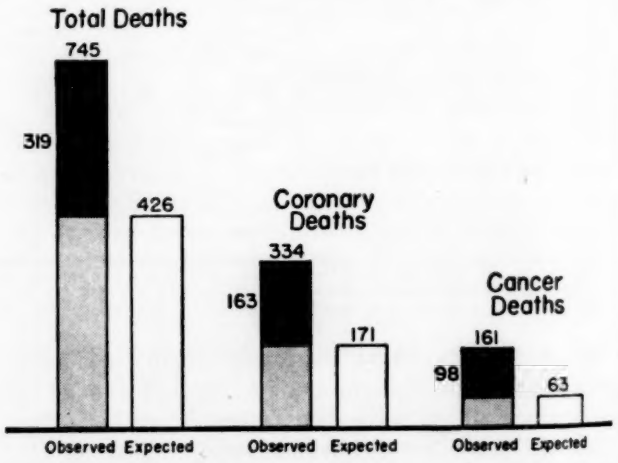

Fig. 9.—Graph showing effect of smoking one pack of cigarettes or more a day.

1938, Pearl [2] reported that, among men in the middle age groups, the life expectancy was greater among nonusers of tobacco than among heavy smokers. The closing paragraph of his paper is worth quoting here: "However envisaged, the net conclusion is clear. In this sizable material the smoking of tobacco was statistically associated with an impairment of life duration, and the amount or degree of this impairment increased as the

1. Lombard, H. L., and Doering, C. R.: Cancer Studies in Massachusetts: 2. Habits, Characteristics and Environment of Individuals With and Without Cancer, New England J. Med. **198**: 481-487, 1928.

2. Pearl, R.: Tobacco Smoking and Longevity, Science **87**: 216-217, 1938.

habitual amount of smoking increased. Here, just as is usually the case in our experience in studies of this sort, the differences between the usage groups in specific mortality rates, as indicated by q_x, practically disappear from about age 70 on. This is presumably an expression of the residual effect of the heavily selective character of the mortality in the earlier years in the groups damaged by the agent (in this case tobacco). On this view those individuals in the damaged groups who survive to 70 or thereabouts are such tough and resistant specimens that thereafter tobacco does them no further measurable harm as a group."

Acting on the lead provided by the findings of Lombard and Doering, the Massachusetts State Health Department obtained information on the use of tobacco among 2,927 men over 40 who visited a cancer clinic.[3] They found a definite association between the use of tobacco and cancer of the buccal cavity as well as cancer of the lung. The report of their findings was published in 1945.

In 1950, four independent groups of investigators reported finding a higher percentage of heavy cigarette smokers among lung cancer patients than among control groups. Since that time, a number of other investigators have reported similar findings. The results of these studies, which were conducted by the so-called "historic method," were recently summarized by Wynder.[4] Elsewhere [5] we have discussed the advantages and disadvantages of the historic method as compared with the follow-up method used in this investigation.

Now let us consider trends in the use of tobacco. The consumption of cigarettes [6] in the United States rose from 630 per person 15 years of age and over in 1920 to 3,500 in 1953. This was a 456% increase in 33 years. In terms of weight, 1.89 lb. (857.28 gm.) of tobacco per person 15 years of age and over were smoked in cigarettes in 1920 as compared with 10.5 lb. (4,762.7 gm.) in 1953. During the same period of time, the consumption of smoking, chewing, and snuff tobacco declined from 4.33 lb. (1,954.04 gm.) to 1.19 lb. (539.77 gm.) per adult per year, and the consumption of cigar tobacco declined from 2.45 lb. (1,111.29 gm.) to 1.25 lb. (566.99 gm.).

Next let us consider trends in age standardized death rates among white men living in the United States. The over-all rate, as well as the death rate from most diseases, declined from 1930 to 1948. Very few diseases showed an increase during this period of time.[7] The only two that showed a very great increase were lung cancer and diseases of the coronary arteries. Rates for lung cancer rose from 5.3 per 100,000 in 1930 to 27.1 per 100,000 in 1948, an increase of 411%. Death rates from diseases of the coronary arteries among white men in the United States rose from 61.1 per 100,000 in 1930 to 235.6 in 1948, an increase of 286%. Because of changing definitions and methods of classifying causes of death, it is difficult to ascertain the exact extent of the increase in death rates from diseases of the coronary arteries. A fuller discussion of this problem is given in another paper.[7] In spite of indications that improvements have been made in cancer cure rates, the standardized death rates from cancer, other than lung cancer, among white men rose from 152.1 in 1930 to 165.2 in 1948.

Several years ago, some persons contended that the apparent rise in lung cancer death rates was merely the result of improvements in diagnosis and reporting. It is now generally accepted that the increase actually occurred.[8] The National Cancer Institute [9] has presented evidence that suggests that there has been a real rise in incidence rates from a number of sites of cancer. One of us [10] has recently written a more detailed discussion of some of the implications in changing death rates from various causes in relation to the problem at hand.

A number of investigators [11] have presented evidence that cigarette smoking causes vasoconstriction as well as an increase in the heart rate and an increase in blood pressure. Wynder, Graham, and Croninger [12] have produced skin cancer in mice by the application of material condensed from cigarette smoke.

In Norway, it was difficult to obtain cigarettes during the time of the German occupation. No accurate data is available on cigarette consumption in Norway during the war years, but some idea of the trends is given by the following figures. The per capita consumption of cigarettes was 310 in 1939, 180 in 1945 (the year the war ended), 410 in 1946, and 470 in 1948.[13] Strøm and Jensen [14] have reported death rates from circulatory diseases in Norway during 1943-1945 (the latter part of the war period) and 1946-1948 (the early postwar years) as compared with the prewar period 1938-1940. They included in the general category of "arteriosclerosis" most of those deaths that we would have classified as caused by diseases of the coronary arteries. The death rates started to decrease soon after the beginning of the war and by the latter part of the war years they had dropped to 57% of the prewar figure in age group 40 to 59 and to 52% of the prewar figure in age group 60 to 79. After the war, the death rates started to increase. Within a few years (1946-1948), the rates had risen to 71% of the prewar figure in age group 40 to 59 and to 57% of the prewar figure in age group 60 to 79. It should be noted that the hypothesis has been advanced that the changes in death rates in Norway were due to changes in dietary factors.

Official figures based on death certificates (as reported by the National Office of Vital Statistics) seem to indicate that death rates from both cancer and heart diseases are higher in urban areas than rural areas in the United

3. Potter, E. A., and Tully, M. R.: Statistical Approach to Cancer Problem in Massachusetts, Am. J. Pub. Health **35**: 485-490, 1945.
4. Wynder, E. L.: Place of Tobacco in Etiology of Lung Cancer, Connecticut M. J. **18**: 321-330, 1954.
5. Hammond, E. C., and Horn, D.: Tobacco and Lung Cancer, Acta Unio Internat. contra Cancrum **9**: 507-511, 1954.
6. The Tobacco Situation, U. S. Department of Agriculture, Bureau of Agricultural Economics, October-December, 1953.
7. Hammond, E. C.: Smoking in Relation to Death Rates from Lung Cancer and Other Diseases, Indust. Med., to be published.
8. Horn, D.: Is Lung Cancer on the Increase? in Cancer of the Lung—An Evaluation of the Problem: Proceedings of the Scientific Session, Annual Meeting, American Cancer Society, Inc., Nov. 3-4, 1953, New York, American Cancer Society, Inc., to be published.
9. Cancer Illness in 10 Urban Areas of the United States, Cancer Morbidity Series, reports 1-10, 1950-52, Washington, D. C., U. S. National Cancer Institute, 1952.
10. Hammond, E. C.: Lung Cancer and Common Inhalants, Cancer, to be published.
11. Weatherby, J. H.: Skin Temperature Changes Caused by Smoking and Other Sympathomimetic Stimuli, Am. Heart J. **24**: 17-30, 1942.
12. Wynder, E. L.; Graham, E. A., and Croninger, A. B.: Experimental Production of Cancer with Cigarette Tar, Cancer Res. **13**: 855-864, 1953.
13. Tobacco, Commodity Series Bulletin, no. 20, Food and Agriculture Organization of the United Nations, Rome, Italy, October, 1952.
14. Strøm, A., and Jensen, R. A.: Mortality from Circulatory Diseases in Norway 1940-1945, Lancet **1**: 126-129, 1951.

States. Some doubt has been expressed as to whether this finding can be taken at face value. Be that as it may, in this study we found a higher percentage of regular cigarette smokers and a lower percentage of men who had never smoked in urban counties than in rural counties.

If the same factor tends to increase death rates from two different diseases, then one should not be surprised to find associations of various sorts between the two diseases or symptoms related to the diseases. For example, a study conducted by the Society of Actuaries [15] revealed that, among persons with a high pulse rate, the number of deaths from cancer (all sites) was about 60% above expected and the number of deaths from lung cancer was about 150% above expected. There were similar findings among persons with significant heart murmurs.

Death rates from lung cancer and from diseases of the coronary arteries are higher among males than among females. Furthermore, death rates from both of these diseases have been increasing more rapidly among males than among females. The reasons for this are not clear. It may be that it is due to a constitutional difference of some sort between the two sexes. There is evidence [16] that cigarette smoking started as an almost universal habit among men many years before the women took up the habit to the same degree. There is also evidence that fewer women than men are heavy smokers in the older age groups in which the majority of deaths from these two diseases occur.

The theory has been advanced that the increase in air pollution may account for both the rise in lung cancer death rates and the urban-rural difference in rates. One of us [17] has pointed out that there may be some merit in this hypothesis. It may well be that air pollution is a contributing factor. If so, the full effect may not be apparent for another decade or two. However, it does not explain the observed association between smoking habits and death rates from cancer in rural as well as in urban areas.

All of the evidence we have seen seems to be consistent with the hypothesis that the association between smoking habits and death rates from lung cancer and diseases of the coronary arteries results from a cause and effect relationship. We know of no alternative hypothesis that is consistent with all of the known facts. It is our opinion, therefore, that regular cigarette smoking causes an increase in death rates from these two diseases. More information is needed before we can make the same statement regarding other specific sites of cancer with the same degree of confidence.

The question arises as to what agent or agents in cigarette smoke produce these effects. Probably nicotine is at least partially responsible for the findings in relation to diseases of the coronary arteries. Other than this, we would not hazard a guess on the subject at present.

SUMMARY AND CONCLUSIONS

It was found that men with a history of regular cigarette smoking have a considerably higher death rate than men who have never smoked or men who have smoked only cigars or pipes. A total of 3,002 deaths occurred among men with a history of regular cigarette smoking. If they had died at the same rate as men who never smoked, only 1,980 would have died. In other words, 1,022 additional deaths (52% more than expected) occurred among men with a history of regular cigarette smoking. This finding was based on a study of 187,766 white men between the ages of 50 and 69. Death rates increase with amount of cigarette smoking. A total of 745 deaths occurred among men who were currently smoking a pack or more of cigarettes a day at the time they were questioned. Only 426 of them would have died if their death rates had been the same as for men who never smoked. That is to say, an additional 319 deaths (75% more than expected) occurred among men who were smoking a pack or more of cigarettes a day at the start of the study.

Disease of the coronary arteries was indicated as the primary cause of death of 2,147 men, 45.6% of those for whom death certificate information was available. The findings in respect to cigarette smoking were about the same as for the over-all death rate, except that the relationship was much more pronounced. Approximately 56% of the total effect of regular cigarette smoking on the over-all death rate may be attributed to the effect of cigarette smoking on deaths primarily caused by diseases of the coronary arteries.

Cancer was indicated as the primary cause of death of 844 men, 18% of those for whom death certificate information was available. Deaths from cancer were definitely associated with regular cigarette smoking, the effect being particularly marked in the older age groups. Approximately 26% of the total effect of cigarette smoking on the over-all death rate may be attributed to the effect of cigarete smoking on deaths from cancer. The findings suggest that there may also be a relationship between cigar and pipe smoking and cancer death rates. At least another year of follow-up will be required before this relationship can be properly evaluated.

Of the 844 deaths from cancer, 167 were indicated on the death certificates as being due to lung cancer. The death rate from lung cancer was much higher among men with a history of regular cigarette smoking than among men who never smoked regularly. Regular cigarette smokers had a higher death rate from cancer of sites other than lung cancer than did men who never smoked.

These findings prove that there is a definite association between smoking habits and death rates, at least in white men between the ages of 50 and 69. Most of the over-all association is accounted for by an association between regular cigarette smoking and death rates from cancer and from diseases of the coronary arteries, although it is possible that some other diseases may also be involved. For reasons discussed, we are of the opinion that the associations found between regular cigarette smoking and death rates from diseases of the coronary arteries and between regular cigarette smoking and death rates from lung cancer reflect cause and effect relationships. More information is needed before we can make the same statement regarding other specific sites of cancer with the same degree of confidence.

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EXPIRATORY POSITIVE PRESSURE OXYGEN THERAPY IN CHRONIC PULMONARY DISEASE

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Oxygen therapy is not necessary for all patients who have chronic pulmonary dysfunction. Patients with ventilatory insufficiency do not require oxygen unless there has been progression of their disease or a crisis precipitated by infection, excessive activity, or other causes. Patients who have severer and more advanced impairment of alveolar ventilation or pulmonary dysfunction with cardiac insufficiency, however, do require oxygen.[1] In most instances, differentiation of these severer forms of dysfunction from the ventilatory type can be made by a clinical evaluation that considers at least the following points: (1) history of the disease, its duration and progression; (2) presence or absence of cyanosis at rest or after moderate exercise; (3) presence or absence of orthopnea or paroxysmal dyspnea, especially at night; and (4) nature and degree of disability—the effect of performing simple tasks such as dressing, bathing, talking, and walking. Cardiopulmonary function tests are extremely informative about the fundamental pathophysiology involved, but these tests are not generally available.

ADMINISTRATION OF OXYGEN THERAPY

Oxygen given by means of ordinary face masks, tents, and nasal catheters has been used in treating patients with chronic pulmonary disease for years, but results are unsatisfactory in almost all cases. In the last four or five years, oxygen given with intermittent positive pressure (inspiratory) has been utilized.[2] This therapy is given for relatively short periods of time, covering days or perhaps a few weeks, and then discontinued; patients are dismissed and may return for repeated treatments. A few patients have continued to have daily treatments at home. For the past 19 months, we have prescribed expiratory positive pressure oxygen therapy for continued daily use by patients with the severer and more advanced forms of chronic pulmonary dysfunction. During this time 36 such patients have been treated. Initially, nine of our patients had heart failure on the right side, and one of these also had carbon dioxide acidosis.

Apparatus.—The apparatus used was the O. E. M. meter mask, which is metered for expiratory positive pressure. This face mask delivers from 45% to 100% concentrations of oxygen at expiratory positive pressures ranging from zero to 4 cm. H_2O. Its features have been briefly and adequately described.[3] Its successful application in the management of acute pulmonary edema was one of the factors that led us to consider the use of the meter mask in treating chronic pulmonary disease. The mask and gauges are simply constructed and occupy a container less than 1 ft. (30.5 cm.) square. The apparatus can be fitted to either a small or a large cylinder of oxygen; it is adaptable to continued daily use, and the cost is within the financial ability of most patients.

Procedure.—Most of the patients were hospitalized from 4 to 10 days to become familiar with the apparatus and to learn other details of our program of management. Each treatment consisted of giving 100% oxygen at an expiratory positive pressure of 4 cm. H_2O. The duration of treatments and their frequency were regulated by the degree of functional incapacity of the patient according to the clinical evaluation already described. Generally, each treatment lasted 10 to 20 minutes, and treatments were given every three or four hours during the day or every two hours in severer cases. If the patient became short of breath between daytime treatments or during the night, use of the mask was allowed for periods of 2 to 10 minutes. During the first two or three days of hospitalization this regimen was closely followed. Activity was moderately restricted, the patient being allowed to sit up or walk a few steps to the bathroom if his condition did not contraindicate this or if dyspnea did not occur. After two or three days of such treatment, most patients felt well and strong enough to walk in the hall. As this occurred, the number of treatments was gradually reduced to three or four a day, the duration stabilized at 15 to 20 minutes for each treatment, and the amount of activity gradually increased.

Patients with heart failure were digitalized. All patients received aminophylline, usually 3 grains (0.19 gm.) orally 30 minutes before meals and at bedtime, as a bronchodilator.[4] Oxygen-nebulized bronchodilators were given some patients when their vital capacity showed increases of 150 to 200 cc. after isopropylarterenol (Isuprel) hydrochloride inhalation. Most patients received antibiotic therapy. Iodides were prescribed as necessary. Rotary postural drainage [5] was ordered initially for all patients but a few who were unusually fatigued or had severe heart failure; these patients were given postural drainage later during the hospital stay. Electrocardiographic evidence of coronary artery disease was present in 10 patients. Difficulty in using the mask

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was experienced by two of these patients, who complained of weakness, sweating, and sensations of heat and suffocation. These two patients generally tolerated the mask well for 5 to 10 minutes before such sensations were experienced. When discomfort occurred, the treatment was discontinued; the duration of each succeeding treatment was then gradually increased by one to two minutes. After a few days these patients were able to use the mask in the same manner as other patients, and they had no further difficulty. One patient with carbon dioxide acidosis was treated by gradually increasing the concentration of oxygen and the degree of expiratory positive pressure.

After the patients' discharge from the hospital, the therapy was continued on a daily schedule. Most patients took two to four 15-minute treatments with 100% oxygen given at an expiratory positive pressure of 4 cm. H_2O; one treatment was taken immediately on arising and another before retiring, with additional treatments, if required, at regular intervals between these times. In addition to the expiratory positive pressure oxygen therapy, the patients followed our program, which is explained in detail elsewhere.[5]

Results of Expiratory Positive Pressure Oxygen Therapy in Thirty-six Patients

Condition on Dismissal	No. of Patients	Subsequent Course: Further Improved	Same	Worse	Died	No Data
Marked improvement	17	8	4	0	4	1
Moderate improvement	18	11	4	2	1	..
No change	1	..	..	..	..	1
Totals	36	19	8	2	5	2

Duration of Therapy.—The duration of continued daily administration of expiratory positive pressure oxygen in these 36 cases was as follows. The therapy was given for 1 to 2 months in 11 cases; for 2 to 7 months in 6 cases; for 7 to 13 months in 10 cases; and for 13 to 19 months in 9 cases. The duration in each instance is calculated as the time interval between the initial treatment and the last treatment, as ascertained through follow-up observation.

RESULTS OF THERAPY

Most patients became comfortable after two to four days of therapy. Patients who, on admission, had been unable to carry on conversation or to walk more than a few steps could walk in the hospital halls, go to the hospital lobby, and walk several feet on the street without stopping or becoming short of breath. During the rest of their hospital stay this exercise tolerance increased, so that after a few days many of these patients were walking from 1½ to as much as 12 or more city blocks without dyspnea, discomfort, or undue fatigue. In general, this is the type of patient listed in the table as markedly improved. Patients who were as incapacitated as those mentioned, or somewhat less, and who responded less dramatically are listed as moderately improved. These patients were able to carry on their necessary everyday activities and to walk up to one-half or even one block in comfort. In the two patients listed as worse cor pulmonale and heart failure on the right side developed after four and five weeks, respectively, while treatment was being given at home. Both had been moderately improved after initial therapy. One patient, about nine months after the episode of heart failure, was about the same as he had been after initial treatment with expiratory positive pressure oxygen. No data are available on the other patient.

The one patient who had carbon dioxide acidosis was semicomatose, bedfast, and cyanotic. He was given 50% oxygen at an expiratory positive pressure of 2 cm. H_2O for 15 minutes every two hours. In 15 hours the carbon dioxide combining power of his blood was within the normal range, and he was breathing somewhat more easily and was more alert. During the remainder of his hospital stay, 10 days, the concentration of oxygen was slowly increased to 100% and the degree of expiratory positive pressure gradually raised to 4 cm. H_2O. On dismissal, the patient was walking about 50 ft. and was considered markedly improved. During the next 16 months he gradually improved further, becoming able to walk comfortably for six or seven blocks. Carbon dioxide combining power determinations at three and seven months after his dismissal were normal. Of the nine patients who had heart failure, four were markedly improved and four were moderately improved on dismissal from the hospital; one patient's condition was unchanged. Of the eight patients who showed improvement, five futher improved, two maintained the status of dismissal, and one died. No data are available on the subsequent course of the patient who did not initially respond to treatment.

Deaths.—Five patients died within 19 months of the initial therapy. One of these was admitted to the hospital in a critical condition, markedly cyanotic, semistuporous, and extremely short of breath. There was some question as to an additional diagnosis of rheumatic valvulitis. After receiving expiratory positive pressure oxygen therapy, the patient improved to the extent of being able to walk in the hall; she was considered well enough in 16 days to travel 350 miles in an automobile. Four days after dismissal she died from what was apparently a pulmonary embolus or, possibly, asphyxia. The second patient who died improved markedly after initial treatments with expiratory positive pressure oxygen and for the next seven months gradually improved further. During the next six months her condition gradually became worse, and she died at home from asphyxia. Little is known concerning a third patient who died except that he improved moderately after the initial treatment and maintained this improvement for at least three months. He died two months after his last communication to us. The other two patients who died improved markedly after initial treatments and improved further during the next three months, at which time they discontinued their own treatments. Both died about six months later, one from carcinoma of the prostate and the other from hemorrhage of the upper gastrointestinal tract. The status of their pulmonary dysfunction at the time of death is not known.

MECHANISM OF ACTION

We believe that the beneficial effects obtained by the use of expiratory positive pressure oxygen therapy as outlined are probably due to a combination of all or many

of the following factors, as well as others, perhaps, which are yet unknown or unrecognized.

Relief of Hypoxia.—In chronic pulmonary dysfunction the fundamental result of bronchial obstruction due to spasm and/or retained secretions, of diminished expansion of the chest or lungs, and of alveolocapillary block, when this is present, is a diminished amount of oxygen delivered to, or absorbed from, the alveoli. Since structural and functional changes in the diseased portions of the lungs secondarily induce functional derangement in the healthy lung tissue, all the alveoli are affected either primarily or secondarily, and hypoxia must be widespread. The degree of impaired function is probably not the same for all alveoli because of local differences in the degree of spasm, obstruction, expansion, and alveolocapillary block; consequently, there are also varying degrees of hypoxia. Oxygen is given at high concentration to insure its adequate supply. The gentle positive pressure of 4 cm. H_2O is believed to enhance its distribution and its mixture with gas already present in the lung and to increase its ability to pass through barriers such as local pulmonary edema [5] and reach the pulmonary capillary endothelium and blood.

Bronchial Dilatation.—Barach and Swenson [6] have shown that positive pressure used during the expiratory cycle results in considerable enlargement of the lumens of small and medium-sized bronchi.

Bronchial and Lymphatic Drainage.—The increased expiratory pressure is thought to have a massaging effect on the lungs that increases the lymphatic drainage and thereby aids in maintaining the dryness of the lungs. The dilation of the bronchi and bronchioles during expiration has a similar effect and, what is more important, facilitates drainage of secretions from the bronchial tree.

Collateral Respiration.—Though the existence of interalveolar pores in the normal lung is doubted by some, there is almost unanimous acceptance of their existence in diseased lungs. Expiratory positive pressure oxygen therapy may act, in part, by improving the collateral respiration through these pores.

The use of expiratory positive pressure oxygen therapy is only a part of a rational therapeutic program that takes into account all the factors in the pathophysiology of chronic pulmonary disease and that includes other measures such as rotary postural drainage, bronchodilators, detergents, control of infection, avoidance of smoking, good general care of the patient, and a period of thorough training. The program attempts to supplement lost pulmonary function by a daily regimen, since most patients with pulmonary dysfunction may be considered in a state of pulmonary decompensation. In patients with impairment of alveolar ventilation or pulmonary dysfunction with cardiac insufficiency, this regimen includes the continued daily use of expiratory positive pressure oxygen therapy as described.

SUMMARY

The use of expiratory positive pressure oxygen therapy in the management of 36 patients with varying types of chronic pulmonary dysfunction, nine of whom had heart failure on the right side and one of whom also had carbon dioxide acidosis, brought about marked improvement in 17 patients (including the patient with carbon dioxide acidosis); moderate improvement in 18 patients; and no change in one patient. Follow-up studies covering a period of 19 months revealed further improvement in 19 patients and maintenance of the original improvement in 8 others; 2 patients were worse, 5 patients had died, and no data were available for the other 2. A complementary program to be continued daily in the home is important.

6. Barach, A. L., and Swenson, P. C.: Effect of Breathing Gases Under Positive Pressure on Lumens of Small and Medium-Sized Bronchi, Arch. Int. Med. **63**: 946-948 (May) 1939.

CLINICAL NOTES

INCIDENCE OF HEPATITIS AFTER USE OF BLOOD AND SERUM TRANSFUSIONS

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In 1952, a letter was sent to all patients who had been admitted in the calendar year 1951 to the Surgical Department A of the Bispebjerg Hospital. The letter inquired whether the patients had had jaundice without gallstones after their stay at the hospital. Of the 4,687 patients to whom letters were mailed, 4,133 replied; the percentage of those replying was 88.

Seventy-eight patients reported having had "jaundice" after discharge; after checking their records to exclude all cases of cancer and diseases of the biliary ducts, this number was reduced to 17 cases (table 1). These cases were verified as hepatitis either by a hospital diagnosis (nine cases) or from case histories reported by doctors who had treated the patient at home.

For the first five patients the incubation period is within that usually found in cases of serum hepatitis. Case 6 is questionable, but as incubation periods as short as 16 days have been reported for viral hepatitis, this case has been included in this group. In case 5, the history clearly showed hepatitis; therefore, in spite of the history of gallstone, it has been accepted in this group. The patients reported on in cases 7 to 10 all received pooled and lyophilized plasma, and in addition, those reported on in cases 7 and 8 received whole blood transfusions. These four are therefore listed as a special group. The long incubation periods for the patients reported on in cases 16 and 17 would appear to rule out any connection between their cases of hepatitis and their stay at the hospital.

Among the patients who received no transfusions there were five cases of hepatitis (cases 11 to 15). There is, of course, a possibility that the infection might have resulted from contaminated syringes, needles, or blood lancets, but this seems unlikely, as the Danish hospitals' regulations forbid the use of such instruments without heat sterilization between patients.

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Careful examination of the patients' records showed the results listed in table 2. Hepatitis connected with the patient's hospital stay developed in 10 of 671 patients who were given transfusions, or in 1.5%.

TABLE 1.—*Development of Hepatitis in Patients Who Had Blood Transfusions and in Control Group*

No. of Case	Age and Sex	Date of Admission, 1951	Disease	No. of Transfusions, 500 Cc. Each	Jaundice		
					Date Observed	Duration, Days	Incubation, Days*
1	58 F	2/11	Duodenal ulcer	3	5/29/51	30	100
2	25 F	5/21	Duodenal ulcer	1	9/ 1/51	45	80
3	69 F	10/25	Gastric ulcer	5	2/21/52	30	120
4	57 M	10/2	Perforated duodenal ulcer	1	1/25/52	60	110
5	38 M	11/9	Gallstones	1	3/ 9/52	60	120
6	55 M	2/1	Duodenal ulcer	2	3/21/51	30	27
7	36 F	4/22	Appendicitis	1+ serum	7/11/51	60	60
8	62 M	11/5	Gastric ulcer	10+ serum	3/ 4/52	†5/28	120
9	36 M	5/1	Perforated duodenal ulcer	Serum	8/20/51	40	110
10	48 M	10/22	Perforated duodenal ulcer	Serum	1/20/52	50	90
11	43 F	3/7	Fibroma of uterus	..	6/ 7/51	30	90
12	29 F	5/9	Renal colic	..	6/26/51	60	45
13	60 M	5/29	Inguinal hernia	..	10/15/51	70	150
14	27 M	11/18	Fractured fibula	..	2/23/52	30	90
15	31 F	3/2	Salpingitis	..	6/27/52	†7/31	115
16	41 M	3/7	Duodenal ulcer	2	11/15/51	30	240
17	68 F	1/8	Abscess of the femur	..	8/23/51	26	240

* The period of incubation is the period from the first transfusion or the day of admission until the observation of jaundice.
† The patient died on this date.

Of the patients who were given transfusions, 193, or 34.8%, failed to answer the letter in 1951; 102 of these, however, are known to have died (the correct number is no doubt much higher). Since some of these might have had hepatitis before death or since it might have developed if they had lived, the numbers given for the incidence of hepatitis are minimum numbers, and a higher percentage is probable. But even with these minimum numbers a significant excess incidence of hepatitis is found in the group given transfusions compared to the group not given transfusions. Of the group who had not been given transfusions, 8.7% did not reply to the letter.

TABLE 2.—*Incidence of Hepatitis After Transfusions of Whole Blood and Pooled Serum**

Type of Transfusion	No. of Transfusions	No. of Patients	No. of Cases of Hepatitis	Percentage of Hepatitis	
				Per Transfusion	Per Patient
Blood transfusion (500 cc.)	1,430	554	6	0.42	1.1
Dry pooled serum †.....	130	117	4	3.1	3.4
No transfusion.....	...	3,691	5	....	0.14

* Only those cases of hepatitis that are believed to be connected with the patient's hospital stay are included.
† A pool of dry serum comes from 100 donors.

In determining whether the excess incidence in the group given transfusions was caused only by transfusions, it should be pointed out that this was not a group of patients chosen at random from all the patients involved in this study. The great difference in the percentage of answers might indicate that those in the group given transfusions were probably more severely ill and, therefore, perhaps more likely to have the disease develop in them rather than in the control group. The hepatitis incidence of 0.12% for the city of Copenhagen in 1951 closely parallels the percentage incidence of 0.14 in the control group.

SUMMARY

In Copenhagen, Denmark, in 1951, the incidence of viral hepatitis among 4,687 hospital patients about one year after their discharge was 1% among those who had received whole blood transfusions, 3 to 4% among those who had received pooled serum transfusions, and 0.14% among those in the control group.

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DETERMINATION OF BLOOD PRESSURE AT THE ANKLE

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In the routine study of patients with hypertension, the determination of the blood pressure in the legs is now recognized as a necessity. Usually this pressure is obtained by placing a large, specially constructed blood pressure cuff around the thigh and auscultating over the popliteal artery. The special cuff is not always available and is sometimes difficult to apply because of obesity; therefore, an alternate method was sought. It was discovered that if a patient had a strong dorsalis pedis or posterior tibial pulse a blood pressure could be obtained in almost every instance by placing the cuff around the ankle. Although both systolic and diastolic pressure can usually be obtained by this method, it was found more reliable to obtain only the systolic pressure by means of palpation of the dorsalis pedis or posterior tibial artery. With the patient lying down, the cuff is applied just around the ankle, with the bag on the anterior medial aspect of the leg just above the ankle. The blood pressure is then determined by the usual palpatory method.

STUDY OF 100 PATIENTS

In 6 of 100 patients studied, the blood pressures obtained by this method were significantly lower than those found in the arm or by the conventional method for determining blood pressure at the thigh. Five of these six patients had weak dorsalis pedis pulses. In the remaining 94 patients, the blood pressures obtained by this method were within 15 mm. Hg of the systolic pressure found by auscultation of the brachial artery or by palpation of the radial artery; the systolic pressure obtained by auscultation over the popliteal artery with a cuff around the thigh was invariably at least 15 mm. Hg greater than that obtained at the ankle by palpation and 10 mm. Hg greater than the blood pressure obtained

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at the arm either by auscultation or palpation (table 1). The average blood pressure of these 94 patients as determined at the arm by auscultation (average of both arms) was 185/112 mm. Hg; the average blood pressure in the thigh was 226/125 mm. Hg. In 60 patients the blood pressure was obtained by auscultation in the ankle over the dorsalis pedis artery; the average blood pressure here was 176/120 mm. Hg, with a systolic spread of 196

TABLE 1.—*Variation in Systolic Blood Pressure Values at Different Points in Ninety-Four Patients*

		Deviation of Blood Pressure, Mm. Hg			
		From Value at Upper Arm		From Value at Wrist	
Site	Method	Range	Average	Range	Average
Wrist	Palpation	− 2 to +10	+ 4	.....	....
Ankle	Palpation	−15 to +12 *	+ 3	−12 to +9 †	− 1
Ankle	Auscultation	−29 to +12	−12	−32 to +8	−16
Knee	.....	+85 to + 5	+62	+82 to +6	+58
Upper arm	Auscultation	....	....	−10 to +2	− 4

* One deviation of −28 mm. Hg was obtained.
† One deviation of −24 mm. Hg was obtained.

to 162 mm. Hg and a diastolic spread of 132 to 104 mm. Hg (table 2). The average difference between systolic pressures at the ankle and the thigh was 41 mm. Hg. The systolic blood pressure at the arm determined by the auscultatory method averaged 6 mm. Hg higher than that at the ankle determined by the palpatory method and 10 mm. Hg higher than that in the leg determined by the auscultatory method. These patients had strong dorsalis pedis pulses; the average age was 41, with ages ranging from 19 to 58.

COARCTATION OF THE AORTA

Only one patient with coarctation of the aorta was tested; this patient had no pulse at either the popliteal or the dorsalis pedis artery. It is now recognized, however, that patients with coarctation of the aorta may have palpable popliteal and dorsalis pedis arteries and that at times a significant blood pressure is obtained over the popliteal artery. It is commonly accepted that a systolic pressure lower in the legs than in the arms is most suggestive of a coarctation. I feel that if the blood pressure of the ankle is found to be 10 mm. Hg or more lower

TABLE 2.—*Blood Pressure Values Obtained at Ankle and Other Points*

			Blood Pressure, Mm. Hg	
Site	Method	No. of Patients	Average	Range
Ankle	Palpation *	94	179	235-146
Ankle	Auscultation *	60	164/120	226/132-132/104
Wrist	Palpation	94	180	229-158
Upper arm	Auscultation	94	176/112	233/130-142/96
Knee	Auscultation	97	238/125	294/144-174/108

* Posterior tibial or dorsalis pedis artery.

than that of either arm by palpation or auscultation, the blood pressure should be determined at the thigh, and, if the systolic pressure at the thigh is lower than that in the arm, coarctation must be strongly suspected. If the systolic pressure at the thigh is greater than that of the arm, a lowered pressure at the ankle is not significant of coarctation. The difference of pressures between the thigh, arm, and ankle might be of some value in the investigation of the status of the peripheral vascular system under standardized conditions; however, if the systolic blood pressure at the ankle is within 10 mm. Hg of the systolic blood pressure of the arm while the patient is lying down, determination of the blood pressure in the thigh is probably not necessary. I have encountered no patients with such blood pressure values in whom further investigation disclosed any evidence of coarctation.

SUMMARY

A method of determining blood pressures at the ankle with an ordinary blood pressure cuff is a useful, simple screening test in the recognition of coarctation of the aorta and may have value in the study of peripheral vascular disease.

SUCTION DRAINAGE AFTER IMPLANTATION OF TANTALUM GAUZE SHEETS

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Early in the use of tantalum gauze for the repair of hernias [1] it was reported that after the implantation of large sheets of tantalum gauze a collection of serum occurred in the wound. The reason for this collection of serum is believed to be the small areas of dead space that are necessarily present on each side of the implanted tantalum gauze. It is well known that any dead space invites the collection of serum. Furthermore, absolute hemostasis in the wide dissections necessary for the repair of very large hernias is impossible; this is undoubtedly also a factor in serum collection. In the first few patients so treated by one of us (A. R. K.) subcutaneous collections of fluid became evident about a week after operation. This fluid was aspirated, repeated aspirations sometimes being necessary. Drainage with cigarette drains placed through stab wounds in the most dependent portions of the dissected skin flaps was later instituted.[2] These drains were taken out from three to six days after operation, depending on the amount of exudate present. However, this method of drainage was not entirely satisfactory, as in some instances there was a further collection of fluid after the drains were removed; in one case, this was a contributory factor in recurrence.[3] The dressings with this method of drainage were messy and the method cumbersome.

One of us (T. J. L.) suggested that a more satisfactory method of drainage than the use of cigarette drains might be the use of catheters with several holes cut in them and the application of continuous suction. This method has now been used in seven cases, with excellent results. When large pieces of tantalum gauze are implanted

From the surgical departments of the Johns Hopkins Hospital, the Baltimore City Hospitals, and the Church Home and Hospital.

1. Koontz, A. R.: Repair of Ventral Hernias with Tantalum Mesh: Preliminary Report, South. M. J. **41**: 214-217 (March) 1948; Preliminary Report on the Use of Tantalum Mesh in the Repair of Ventral Hernias, Ann. Surg. **127**: 1079-1085 (May) 1948.
2. Koontz, A. R.: Tantalum Mesh in Hernia Repair: Experimental and Clinical Results, Tr. South. S. A. **60**: 394-403, 1948.
3. Koontz, A. R.: A Failure with Tantalum Gauze in Ventral Hernia Repair, to be published.

(pieces 12 in. [30.5 cm.] square have been used in a number of cases), four small stab wounds are made in the skin flaps, two on each side, and no. 16 F. catheters with several holes cut in their sides are inserted through them. After the patient returns to his room or ward, suction is applied to the catheters. By the use of glass Y-tubes and supplementary rubber tubing all four catheters may be connected to one suction machine. The wounds are thereby kept completely dry. There is no drainage onto the dressings, as had been the case when cigarette drains were used. On the third or fourth day after operation the catheter drains are shortened, and the next day they are removed entirely.

ADDENDUM

Since this article was written, 11 additional patients have been treated by the same method with equally satisfactory results.

1014 St. Paul St. (2) (Dr. Koontz).

SIMPLIFIED TECHNIQUE FOR PROSTATIC CYTODIAGNOSIS

S. A. Gunn, M.D.,
and
J. Ernest Ayre, M.D., Miami, Fla.

Cytological interpretation is dependent on representative cells from the tissues under examination and the preservation of cells suitable for satisfactory study and interpretation. The prostatic smear in the past has not played a satisfactory role in the diagnosis of early cancer of the prostate for various reasons. Possibly too little attention was paid to cell-collecting techniques, and inadequate cell preparations resulted that were unsatisfactory for cytodiagnosis.

In our work in compiling data for a review of the application of cytology to the prostatic smear,[1] certain technical questions have arisen. We have found that careful attention to certain small details frequently makes the difference between a satisfactory or unsatisfactory specimen.

There is a definite technique by which the prostatic fluid should be expressed from the prostate to insure a representative prostatic cell population. The seminal vesicles must be avoided in the massage, as the spermatozoa obscure the prostatic cells and impair interpretation of the cells. Each lobe should be massaged separately from the periphery toward the midline and then stripped down the middle. The prostatic material should be allowed to flow directly on to a slide. This slide must be prepared properly prior to the massage. It is frequently desirable to advise the patient to hold the slide directly under the meatus during massage, as in some cases there is only one drop, which may fall to the floor. The urethra is stripped starting far back in the perineum in order to move the prostatic fluid forward for collection of cells on the slide. If after massage and stripping there is no fluid obtained, the first 10 drops of urine may be allowed to flow on to the previously prepared slide. (Usually at least a small drop is obtainable, so this procedure is exceptional.) The presence of pus cells obscures the field and an effort should be made to treat and eliminate or decrease any infection before cytodiagnosis is attempted.

Perhaps the most important single factor in obtaining a satisfactory prostatic smear for cytological study is the necessity of seeing that the cells adhere to the slide. During the process of fixation and staining the cells are washed off, and the final result often gives too few cells for study. This difficulty is overcome as follows.

The slide is always prepared with a thin film of Meyer's albumin (equal parts of egg albumin and glycerin) before the expressed prostatic fluid is allowed to flow on to the slide. One of us (J. E. A.) has used slides completely frosted[2] on one side. The slight roughening of the frosted slide increases the number of cells adhering to the slide. After mounting with Canada balsam, the preparation is clear and transparent. Drying produces distortion of the cells, and not more than 30 seconds should elapse between the time the prostatic fluid is placed on the slide and the immersion of the slide in the fixative.

Many times, all the above precautions have been taken and the report will show no cells for study. This is sometimes caused by the fact that despite a large amount of fluid expressed, the fluid may be completely acellular. Repeated massages will usually demonstrate adequate cells for interpretation.

Applying the above techniques, we have examined 599 cases, of which 99 cases, or 16%, were classed unsatisfactory. There were 103 cases repeated because further diagnostic studies were needed. Thus we examined a total of 1,404 slides. In this series there were 26 cases of known clinical cancer in which positive cell diagnosis was made in 19 cases. In the overall group of 599 cases, a total of 49 with suspicious cell studies and 51 with definitely positive cell studies were found in this series. Of even greater importance, there were five cases with positive studies proved by tissue examination that were in the preclinical category, as the patients were symptom-free and the prostate showed no clinical signs of cancer.

Simplicity is a significant feature of the prostatic smear. With careful technique, patience, and a readiness to do occasional repeat smears, prostatic cell study can be used as a valuable aid in early prostatic cancer detection. The physician may thus be alerted to the presence of cancer in the prostate when the examining finger shows no abnormalities. The success of any diagnostic procedure of this type is dependent on the interest and enthusiasm of the clinicians participating, the use of proper cell collecting techniques, and the experience of the cytologist performing the interpretation.

SUMMARY

The adequacy of simple techniques for preparing satisfactory prostatic smears for cytological study is reflected in a trial series of 1,404 slides from 599 cases. Unsuspected preclinical cancer of the prostate was detected by routine smears in five cases.

1155 N. W. 14th St. (Dr. Gunn).

From the Cancer Institute at Miami.

1. Gunn, S. A., and others: The Clinical Application of Cytology to Prostatic Cancer, J. Urol., to be published.

2. The slides were supplied by Cyto Laboratories, 154 N. Maine St., Westport, Conn.

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

Carbomycin.—Magnamycin (Pfizer).—Carbomycin is an antibiotic isolated from the elaboration products of Streptomyces halstedii, when grown by deep culture in suitable media. The structural formula of carbomycin has not been established.

Actions and Uses.—Carbomycin possesses strong inhibitory activity against certain gram-positive bacteria. Its activity against other types of bacteria and other micro-organisms is under investigation. Until adequate clinical evidence becomes available, carbomycin is indicated only in the treatment of infections caused by staphylococci, pneumococci, and hemolytic streptococci. Therefore, it is useful in the treatment of pneumonia, urinary tract infections, soft tissue infections, abscesses, and tonsillitis caused by these organisms. Its usefulness in bacteremia and septicemia has not been completely evaluated, but it can be employed in these conditions also when the causative organisms are found to be susceptible on the basis of sensitivity tests.

Carbomycin, as the free base, is only slightly soluble in water but is readily absorbed following oral administration. Blood levels produced following oral administration are not significantly lower than when water-soluble acid salts of the drug are administered by intramuscular injection. An appreciable amount (approximately 10% of the ingested dose) is excreted in the urine in active form, and the drug appears to be distributed throughout the body in all organs and secretions. Following intravenous administration of its soluble salts, the drug disappears rapidly from the blood stream. The ultimate disposition in the body of the unexcreted portion has not been determined.

Carbomycin exhibits a low degree of toxicity in experimental animals. Clinically, no harmful side-effects have been observed with therapeutically effective doses. Studies of the urine, blood, and liver function have revealed no evidence of toxic action. Nausea and vomiting are the principal side-effects; diarrhea occurs infrequently. As for all new drugs, close clinical observation for undiscovered toxic effects is desirable; and, for periods of therapy extending beyond two weeks, repeated blood counts should be performed. As with other antibiotics, its use may result in overgrowth of nonsusceptible organisms, particularly Monilia. If new infections caused by nonsusceptible bacteria or fungi appear during therapy, the drug should be discontinued and/or appropriate measures instituted.

Dosage.—Carbomycin is administered orally; optimal dosage is still under investigation. For adults the present total daily dosage is 2 gm. divided into four equal doses given every six hours; in urinary tract infections and in some soft tissue infections, 1 gm. daily may be adequate. When infections do not respond to 0.5 gm. every six hours, the dosage may be increased to 1 gm. every six hours. Duration of therapy is governed by the clinical response and should be continued until temperature, pulse, and respiration have been normal for 48 hours and until other acute manifestations have subsided. The dosage for children is also under study; carbomycin is presently given on the basis of 50 to 100 mg. per kilogram of body weight daily, divided into four equal doses administered at six-hour intervals.

Pfizer Laboratories, Division of Chas. Pfizer & Co., Inc., Brooklyn.

Tablets Magnamycin: 0.1 and 0.25 gm.

Bacitracin (See New and Nonofficial Remedies 1954, p. 127).

Premo Pharmaceutical Laboratories, Inc., South Hackensack, N. J.

Ointment Bacitracin: 14.2 and 28.5 gm. tubes. An ointment containing 500 units of bacitracin in each gram.

Ophthalmic Ointment Bacitracin: 3.54 gm. tubes. An ointment containing 500 units of bacitracin in each gram.

Benzathine Penicillin G (See New and Nonofficial Remedies 1954, p. 146).

Pfizer Laboratories, Division of Chas. Pfizer & Co., Inc., Brooklyn, N. Y.

Oral Suspension Permapen: 60 cc. bottles. A suspension containing 60,000 units of benzathine penicillin G in each cubic centimeter. Buffered with sodium citrate. Preserved with 0.016% propylparaben and 0.09% methylparaben.

Aqueous Suspension Permapen: 10 1 cc. Steraject cartridges. Each cartridge contains 600,000 units of benzathine penicillin G in each cubic centimeter. Preserved with 0.01% propylparaben and 0.12% methylparaben. Packaged with 10 sterile hypodermic needles.

Dextran (See New and Nonofficial Remedies 1954, p. 249).

Cutter Laboratories, Berkeley, Calif.

Solution Dextran 6%: 250 and 500 cc. Saftiflasks. An isotonic solution containing 60 mg. of dextran in each cubic centimeter. U. S. patents 2,089,217; 2,409,816; and 2,437,518.

Erythromycin (See New and Nonofficial Remedies 1954, p. 133).

The Upjohn Company, Kalamazoo, Mich.

Tablets Erythromycin (Specially Coated): 0.1 gm.

Erythromycin Stearate (See New and Nonofficial Remedies 1954, p. 134).

Abbott Laboratories, North Chicago, Ill.

Tablets Erythrocin Stearate (Film Sealed): 0.1 and 0.2 gm. Each tablet contains the equivalent of 0.1 or 0.2 gm. of erythromycin base.

Hydrocortisone (See New and Nonofficial Remedies 1954, p. 395).

Pfizer Laboratories, Division of Chas. Pfizer & Co., Inc., Brooklyn, N. Y.

Tablets Cortril: 10 and 20 mg. U. S. patent 2,658,023.

Hydrocortisone Acetate (See New and Nonofficial Remedies 1954, p. 397).

Pfizer Laboratories, Division of Chas. Pfizer & Co., Inc., Brooklyn, N. Y.

Ointment Cortril Acetate: 5 gm. tubes. An ointment containing 10 or 25 mg. of hydrocortisone acetate in each gram.

Ophthalmic Ointment Cortril Acetate: 3.5 gm. tubes. An ointment containing 5 or 25 mg. of hydrocortisone acetate in each gram.

Suspension Cortril Acetate: 5 cc. vials. A suspension containing 25 mg. of hydrocortisone acetate in each cubic centimeter. Preserved with 0.24% methylparaben and 0.026% propylparaben. U. S. patent 2,658,023.

Isoniazid (See New and Nonofficial Remedies 1954, p. 86).

Pfizer Laboratories, Division of Chas. Pfizer & Co., Inc., Brooklyn, N. Y.

Tablets Cotinazin: 50 mg.

Menadione-U.S.P. (See New and Nonofficial Remedies 1954, p. 575).

Gold Leaf Pharmacal Company, Inc., New Rochelle, N. Y.

Tablets Menadione: 2 mg.

Meth-Dia-Mer-Sulfonamides (See New and Nonofficial Remedies 1954, p. 117).

Raymer Pharmacal Company, Philadelphia.

Tablets Ray-Tri-Mides: 0.5 gm. Each tablet contains 0.167 gm. each of sulfadiazine, sulfamerazine, and sulfamethazine.

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STANDARDIZED BRUCELLA DIAGNOSTIC ANTIGEN

Brucellosis is an insidious human disease, often overlooked and frequently misdiagnosed. The clinical manifestations are not specific and commonly mimic those of influenza, infectious mononucleosis, or hepatitis without jaundice. The Committee on Public Health Aspects of Brucellosis of the National Research Council has emphasized that a definitive diagnosis depends on critical data from the laboratory.[1] A precise diagnosis can be established only after Brucella organisms have been isolated from the patient. Because such isolates are not always possible or successful, the most commonly used procedure for a presumptive diagnosis of the disease has been the agglutination test. The committee has emphasized the need for a standardized antigen and technique in performing this test.[2] The indiscriminate preparation of Brucella antigens by individual laboratories leads to unreliable results and creates confusion among clinicians. With a properly standardized antigen, the test would become more reliable and results from different laboratories would be comparable. Through the efforts of the committee of the National Research Council a Brucella antigen standardized according to the committee's recommendations will soon be made available commercially. The committee has also recommended that a titer of 1:320 or higher will yield more reliable information than lower titers. Titers below 1:100 may be nonspecific or may reflect an exposure to the disease some time in the past that in turn has nothing to do with a present illness.

The availability of a standardized Brucella antigen for the agglutination test in human brucellosis will be welcomed by both laboratories and clinicians. With antibiotics and other antibacterial agents being used so freely for febrile diseases of unknown cause, the diagnosis of brucellosis will rest less on bacteriological data and more on the results of the agglutination test. A definitive diagnosis in this disease is important, since properly selected antibiotics are now highly effective in treatment.

1. Spink, W. W.; McCullough, N. B.; Hutchings, L. M., and Mingle, C. K.: Diagnostic Criteria for Human Brucellosis: Report No. 2 of the National Research Council, Committee on Public Health Aspects of Brucellosis, J. A. M. A. **149**: 805-808 (June 28) 1952.

2. Spink, W. W.; McCullough, N. B.; Hutchings, L. M., and Mingle, C. K.: A Standardized Antigen and Agglutination Technic for Human Brucellosis: Report No. 3 of the National Research Council, Committee on Public Health Aspects of Brucellosis, Am. J. Clin. Path. **24**: 496-498 (April) 1954.

CHEMOTHERAPY AND PURINE ANTAGONISTS

Various devices of a chemical nature have been employed in the attempt to control neoplastic disease. In the first third of this century, nutritional biochemistry was frequently called on; thus the restriction of indispensable dietary factors, such as essential amino acids, vitamins, or even the reduction of gross energy intake, were suggested in the hope that the malignant tissue would succumb to the imposed stress sooner than would the host. Again, agents like radioactive isotopes and certain hormones have been employed more recently because of their ability to cause atrophy of specific tissues. Substances specifically exerting their deterring action on cells showing unusually rapid development have also been suggested for therapeutic use. A recent trend [1] takes advantage of the newer knowledge of the heterogeneity of constitution of the nucleic acids, that group of substances that, through their relationship to the makeup of the cell nucleus, may be said to be in a preferred position to influence life itself.

Early views of the quantitative relationship of the nitrogenous bases (purines and pyrimidines) to each other and to the other constituents of the very large nucleic acid molecule have been altered, as has been the concept of its physical structure.[2] There is a surprising specificity in the use of sources of food nitrogen in building the purines of nucleic acid. Thus, with pigeons, the nitrogen of ammonium compounds can be traced to the purines and pyrimidines of muscle,[3] whereas the feeding of labeled guanine to rats fails to produce labeling in the tissue purines [4] although in mice the opposite is true.[5] This indicates a high degree of species specificity in the biosynthesis of nucleic acid as shown by the diversity of metabolism of a given substance. Another study shows that there is a different rate of renewal of pentose nucleic acid than that of desoxypentose nucleic acid in a given organ and, furthermore, that different organs in the same animal show different rates of incorporation of a single source of nitrogen into the nucleic acid of that organ.[6] Again, the biosynthesis of purines in nucleic acids from labeled formate varies considerably for various organs.[7]

1. Rhoads, C. P.: Rational Cancer Chemotherapy, Science **119**: 77, 1954.

2. Elson, D., and Chargaff, E.: Nucleotide Composition of Pentose Nucleic Acids from Different Fractions of the Hepatic Cell, Fed. Proc. **10**: 180, 1951. Brown, G. L., and Watson, M.: Heterogeneity of Deoxyribonucleic Acids, Nature **172**: 339, 1953. Chargaff, E.; Crampton, C. F., and Lipshitz, R.: Separation of Calf Thymus Deoxyribonucleic Acid into Fractions of Different Composition, ibid. **172**: 289, 1953.

3. Barnes, F. W., Jr., and Schoenheimer, R.: On the Biological Synthesis of Purines and Pyrimidines, J. Biol. Chem. **151**: 123, 1943.

4. Plentl, A. A., and Schoenheimer, R.: Studies in the Metabolism of Purines and Pyrimidines by Means of Isotopic Nitrogen, J. Biol. Chem. **153**: 203, 1944.

5. Brown, G. B.; Bendich, A.; Roll, P. M., and Sugiura, K.: Utilization of Guanine by C57 Black Mouse Bearing Adenocarcinoma Eo771, Proc. Soc. Exper. Biol. & Med. **72**: 501, 1949.

6. Furst, S. S.; Roll, P. M., and Brown, G. B.: On the Removal of the Purines of the Desoxypentose and Pentose Nucleic Acids, J. Biol. Chem. **183**: 251, 1950.

7. Bendich, A.; Russell, P. J., Jr., and Brown, B. B.: On the Heterogeneity of the Desoxyribonucleic Acids, J. Biol. Chem. **203**: 305, 1953.

In view of the foregoing evidences of specificity of demand for raw materials from which nucleic acids can be elaborated, a new approach to cancer therapy has been suggested.[1] In much the same way that metabolic antagonists have been used in studying the action of vitamins, compounds somewhat similar in constitution to the nitrogenous bases in nucleic acid have been studied. There is evidence that these slightly altered metabolites are incorporated into the cell nucleic acid and that, because of the structural alteration of the molecule, further development of the cell is halted. Of the so-called metabolic antagonists, 2,6-diaminopurine, 8-azaguanine, and 6-mercaptopurine appear promising on the basis of preliminary experimental studies. In clinical trials, 6-mercaptopurine was employed in a group of children with leukemia, and the results are considered to be promising.[8]

OXYTOCIN AND MILK EJECTION

A relationship between the pituitary gland and the mammary glands was first noted in 1910 by Ott and Scott, who described an increased output of milk following injections of posterior lobe extracts.[1] While they interpreted this as a galactagogic effect, it was soon realized the effect involved expression of milk through stimulation of the gland musculature rather than actual secretion of milk.[2] Subsequently it was shown that the effect is associated with the oxytocic rather than the pressor fraction and that the expression of milk is part of a reflex now commonly known as the "let-down" reflex. The afferent stimuli are afforded by suckling or nuzzling of the nipples or by the sounds or actions associated with milking. These afferent stimuli release oxytocin from the neurohypophysis, which in turn causes the myoepithelium of the alveoli of the mammary gland to contract, ejecting the milk into the gland sinus. Inhibition of the reflex is readily accomplished by injections of epinephrine or by psychic stimuli such as fright.[3]

Studies on farm animals have shown that the natural "let-down" stimulus apparently contracts the myoepithelial tissue to an incomplete degree, since administration of exogenous oxytocin after completion of a normal milking leads to the expression of complementary milk, amounting to some 12 to 20% of the total yield. The following milking is low by approximately the amount of the complementary milk and gives a low-fat milk indicating no carry over of complementary milk. If oxytocin is administered at consecutive milkings, there is an increase in the total production of milk and butterfat, attributable at least in large part to the fact that complete ejection of the milk permits maximum space for accumulation before the secretory pressures are balanced by intra-alveolar pressures.[4]

The milk-ejecting properties of posterior pituitary extracts have attracted comparatively little clinical interest. Waller, it is true, concluded a "let-down" reflex occurred in human patients who described sensations in the breast such as a "drawing" sensation or a feeling like "pins and needles" and a hardening of the breast just prior to a sudden outflowing of milk. He described this as the "draught" reflex and pointed out it could develop into a conditioned reflex.[5] Newton and Newton demonstrated that oxytocin caused a "let-down" of milk in the human being and would overcome the inhibition of lactation that followed disturbing stimuli. They suggested breast engorgement could arise from a faulty "let-down" reflex and that considerable relief might result from administration of oxytocin prior to emptying the breasts by natural or artificial means.[6]

The availability of highly purified oxytocin and of synthetic oxytocin has permitted Nickerson and his associates to provide conclusive proof that the milk-ejection activity of oxytocin is inherent in its molecular structure. Furthermore, they have established that the optimum dose for eliciting this effect in the human being appears to be 0.5 units intravenously or 2 units intramuscularly. While the flow of milk so elicited was transitory, if the baby were put to nurse shortly thereafter the mother usually reported the child obtained milk with apparently less effort than previously. These investigators, like Newton and Newton, were impressed by the potential clinical value of oxytocin in problems of lactation.[7]

From these studies, it would appear that the oxytocic hormone of the neurohypophysis can be ascribed a physiological role in the initiation of lactation. Whether its uterine-stimulating effect plays a comparable role at parturition is less clear cut [8]; however, recent work, again in farm animals, points to a possible physiological role of this hormone in facilitating the transport of spermatozoa in the female reproductive tract. Stimulation of the reproductive organs of the cow by artificial insemination or by natural mating leads reflexly both to increased uterine motility and to milk ejection, both effects being inhibited by epinephrine. The increased uterine motility is associated with a more rapid rate of sperm transportation.[9] If rapid transport of sperm is an important factor in fertility, it appears reasonable to conclude that excitement, fright, or other disturbing circumstances, by causing increased endogenous epinephrine, could reduce fertility in the cow and possibly other species.

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8. Barchenal, J. H., and others: Clinical Evaluation of a New Antimetabolite, 6-Mercaptopurine in the Treatment of Leukemia and Allied Diseases, Blood **8**: 965, 1953.

1. Ott, I., and Scott, J. C.: The Action of Infundibulin upon the Mammary Secretion, Proc. Soc. Exper. Biol. & Med. **8**: 48, 1910-1911.

2. Gaines, W. L.: A Contribution to the Physiology of Lactation, Am. J. Physiol. **35**: 285, 1915. Petersen, W. E.: Lactation, Physiol. Rev. **24**: 340, 1944.

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5. Waller, H. K.: A Reflex Governing the Outflow of Milk from the Breast, Lancet **1**: 69, 1943.

6. Newton, M., and Newton, N. R.: Postpartum Engorgement of the Breast, Am. J. Obst. & Gynec. **61**: 664, 1951; The Let-Down Reflex in Human Lactation, J. Pediat. **33**: 698, 1948.

7. Nickerson, I., and others: Oxytocin and Milk Ejection, Am. J. Obst. & Gynec. **67**: 1028, 1954.

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ORGANIZATION SECTION

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

Because of their general import and the desirability of widespread distribution, the Council on Medical Education and Hospitals wishes to direct attention to the following actions taken during the recent San Francisco meeting of the American Medical Association.

1. The Council on Medical Education and Hospitals of the American Medical Association approved the recommendations of its Committee on Essentials to the effect that straight internship in pathology, obstetrics, and gynecology be continued, pending further study and clarification of the Council's over-all policy on the matter of internships. No additional straight internship in these areas will be approved until final clarification of this policy.

2. The following schools of medicine have been recognized as fully approved four year medical schools: the University of North Carolina School of Medicine, the University of British Columbia Faculty of Medicine, and the University of Puerto Rico School of Medicine.

3. On recommendation of the Council on Medical Education and Hospitals and on approval of the Board of Trustees, the House of Delegates of the American Medical Association at its annual session in San Francisco on June 23, 1954, took the following action in regard to discontinuing hospital registration as a Council function:

The primary function of the Council on Medical Education and Hospitals is the improvement of educational standards at various levels of medical education. Inasmuch as registration of hospitals does not directly involve programs of medical education, and the Joint Commission on Accreditation of Hospitals is concerned with hospital standards apart from medical education and is in a position to carry out the registration of hospitals more effectively than is the Council, it is recommended that: (*a*) the registration of hospitals by the Council be discontinued; (*b*) the Joint Commission on Accreditation of Hospitals be requested to undertake registration of hospitals in addition to its present accreditation activities; (*c*) the Council continue its statistical studies of matter relating to hospitals, at least until such time as details of transfer are worked out; and (*d*) the "Essentials of a Registered Hospital" be declared no longer in effect.

The above action does not imply any change in the program of internship approval or to the approval of residencies, which will continue to be a function of the Council in collaboration with the specialty boards.

A. M. A. ESTABLISHES NEW LAW DEPARTMENT

The Board of Trustees recently established a new department within the American Medical Association. It will be known as the Law Department. Effective Aug. 1, the Bureau of Legal Medicine and Legislation and all of its records and personnel will be transferred to this newly established department. Mr. J. W. Holloway Jr., who has headed the Bureau of Legal Medicine for many years and who is rated as one of the country's leading experts on medicolegal problems, will serve as consultant to the new department. The Law Department's director will be C. Joseph Stetler, who came to the A. M. A. in March, 1951, as secretary of the Council on National Emergency Medical Service. He received his LL.B. and LL.M. degrees from Columbus University, Washington, D. C., and is a member of the bar in the District of Columbia and in Illinois.

The staffing of the A. M. A. Committee on Legislation will be provided by the Law Department. All requests for legal opinions and advice from the various councils, bureaus, and departments within the A. M. A. headquarters office will be made directly to the Law Department.

A. M. A. FILM WINS HONORS

The documentary film "A Citizen Participates," on which the American Medical Association holds television rights, has won two honors as an educational motion picture. The film received honors at the Cleveland Film Festival and was chosen by *Scholastic Teacher* for a national film award. "A Citizen Participates" describes how a small town in need of a physician goes about getting one. State and county medical societies have exclusive use of this film for local television showings until Dec. 31, 1954. It can be booked through the A. M. A.'s TV Film Library.

MOVIE SCENES IN A. M. A. BUILDING

The A. M. A. headquarters building became a movie set last week when cameramen photographed scenes for the American Medical Association's new television film, "A Life to Save." Produced especially for use on local stations by state and county medical societies, this 27 minute film tells how a woman, duped by a quack, is saved from death by prompt action of her family physician. The story shows how various A. M. A. departments, councils, and bureaus supply information on a quack physician's background, education, and method of treatment. "A Life to Save" will receive a premiere showing at the A. M. A.'s Medical Public Relations Institute Sept. 1 and 2 at the Drake Hotel Chicago. General release of the film is set for Oct. 1.

FEDERAL MEDICAL LEGISLATION

Tax Postponement for Self-Employed to Create Annuities

Congressman Ray (R., N. Y.) in H. R. 9754, Congressman Wainwright (R., N. Y.) in H. R. 8796, and Congressman Radwan (R., N. Y.) in H. R. 9793, propose to amend the Internal Revenue Code to encourage the Jenkins-Keogh theory, but the amounts to be excluded are much more limited. The first two bills are essentially similar to H. R. 9618 previously reported, and the Radwan measure is identical with H. R. 9618. The bill was referred to the Ways and Means Committee.

Labor Welfare Funds

Congressman Gwinn (R., N. Y.) in H. R. 9705 would amend the National Labor Relations Act to forbid an employer to pay into any employee fund (such as health insurance) unless the payments are compensation for employment. He would also forbid labor officials or employers who have an interest in the fund to receive commissions from the fund or to have insurance company connections. The bill was referred to the Education and Labor Committee.

Training Benefits to Veterans Under GI Bill of Rights

Congressman Teague (D., Texas) in H. R. 9738 would direct the Department of Health, Education, and Welfare to make a full and complete study of the effect of the education and training benefits furnished veterans under the Serviceman's Readjustment Act of 1944. The bill was referred to the Veterans Affairs Committee.

Unemployment Compensation Standards

Congressman Howell (D., N. J.) in H. R. 9788, which is identical with H. R. 9450, H. R. 9533, S. 3553, and five other House bills, would redefine the term "employer" in the Internal Revenue Code to mean anyone who has one or more individuals in employment. The bill was referred to the Ways and Means Committee.

Prepared by the Washington Office of the American Medical Association.

THE A. M. A. LABORATORIES

This is one of a series of brief statements explaining the work of various departments of the American Medical Association.—ED.

The Chemical Laboratory was established in 1906 to aid the Council on Pharmacy and Chemistry in the evaluation and standardization of chemotherapeutic agents. As manufacturers and others have cooperated with the Council, the efforts of the laboratory have turned more to the establishment of tests and standards for effective remedies and less to identification of mysterious mixtures. Specifically the laboratory prepares structural formulas for printing purposes and develops definitions, descriptions, tests for identity and purity, procedures for the determination of active ingredients, and descriptions of dosage forms. The control practices of the firms presenting products are considered. The work of the laboratory assures the physician that Council-accepted products conform to a high standard of purity and potency. The laboratory supplies chemical data for the Bureau of Investigation and other departments of the A. M. A., checks chemical data and claims on advertising to be carried in the A. M. A. journals, and prepares monographs for Tests and Standards and for New and Nonofficial Remedies for the Council on Pharmacy and Chemistry and for THE JOURNAL. It also cooperates on problems of chemical nature related to drugs with such organizations as the Food and Drug Administration, Federal Trade Commission, United States Pharmacopeia, American Pharmaceutical Association, and the Laboratory of the American Dental Association. In addition the laboratory devotes a portion of its time to investigating problems of general interest to the medical profession, such as enteric coatings, cigarettes, and filters.

The Physical Laboratory was established in 1952 under the direction of the Council on Physical Medicine and Rehabilitation. Most of the laboratory's work is devoted to the physical testing of apparatus, whether therapeutic or diagnostic, submitted to the Council by manufacturers for listing in "Apparatus Accepted," such as infrared lamps, diathermy equipment, generators for electrotherapy, resuscitators, and respirators. The primary purpose is to verify the manufacturer's claims as to the physical construction and performance of the device; other claims as to its clinical value are verified by cooperating physicians to whom the device is sent for a period of use in practical situations. The laboratory also examines some forms of apparatus not within the purview of the Council if proposed for advertising in the publications of the Association or received for scrutiny by the Bureau of Investigation. The results of physical and clinical testing are filed in the Council office and are available only through the Council.

The Microbiologic Laboratory, organized in 1949 as a section of the Council on Pharmacy and Chemistry, examines and evaluates such products as antibiotics, vaccines, and antibacterial and antifungal agents. The laboratory sets up standards and test procedures for examining products, assists other sections of the A. M. A. on microbiological problems concerned with advertising, literature, and revisions of New and Nonofficial Remedies. It also examines foods, drugs and other medicaments, and cosmetics for bacterial and fungal contamination and prepares monographs and descriptions of biological drugs for New and Nonofficial Remedies and Tests and Standards. It cooperates with the various departments and councils of the A. M. A. in respect to bacteriological problems concerned with identification of products, advertising, literature, editorial policy, and investigation. The testing program currently includes sterility tests for all injectables submitted to the Council on Pharmacy and Chemistry, and assays of antibiotics and vitamins. Germicides and antiseptics are tested for their antimicrobial activity against the particular micro-organisms specified in claims made for a product by the manufacturer.

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

National Officers, Directors, and Committee Chairmen—1954-1955

President: Mrs. George Turner, 3009 Silver Street, El Paso, Texas.

President-Elect: Mrs. Mason G. Lawson, 200 Ridgeway, Little Rock, Ark.

First Vice-President: Mrs. Robert Flanders, 320 N. River Road, Manchester, N. H.

Second Vice-President: Mrs. Harlan English, 6 W. Raymond Avenue, Danville, Ill.

Third Vice-President: Mrs. A. M. Okelberry, 237-7th Avenue, Salt Lake City, Utah.

Fourth Vice-President: Mrs. Clark Bailey, 431 Mount Street, Harlan, Ky.

Fifth Vice-President: Mrs. Thomas d'Angelo, 157-05 Rose Avenue, Flushing, N. Y.

Constitutional Secretary: Mrs. Carl Burkland, 5349 Marconi Avenue, Carmichael, Calif.

Treasurer: Mrs. George H. Garrison, 508 N. W. 40th Street, Oklahoma City, Okla.

Finance Secretary: Mrs. Jay G. Linn, 36 Altadena Drive, Pittsburgh 28, Pa.

Directors for Two Years: Mrs. Alfred F. Burnside, Pine Acres, Arcadia, Columbia, S. C.; Mrs. Henry Garnjobst, 508 Jefferson Street, Corvallis, Ore.; and Mrs. Harold B. Johnson, 44 St. James Place, Buffalo 22, N. Y.

Directors for One Year: Mrs. Leo J. Schaefer, 700 Highland Avenue, Salina, Kan.; Mrs. Truman E. Caylor, Box 264, River Road, Bluffton, Ind.; Mrs. Paul C. Craig, Old Wyomissing Road, Wyomissing, Pa.; and Mrs. Raymond T. Wayland, Box 542, Rt. 1, Pierce Road, Saratoga, Calif.

Parliamentarian: Mrs. David B. Allman, 104 St. Charles Place, Atlantic City, N. J.

Historian: Mrs. Jesse D. Hamer, 1819 N. 11th Avenue, Phoenix, Ariz.

Finance: Mrs. Jay G. Linn, 36 Altadena Drive, Pittsburgh, Pa.

Legislation: Mrs. Charles L. Goodhand, 1228 Washington Avenue, Parkersburg, W. Va.

Organization: Mrs. Robert Flanders, 320 N. River Road, Manchester, N. H.

Program: Mrs. George W. Cooperrider, 1828 Bryden Road, Columbus 5, Ohio.

Publications: Mrs. James P. Simonds, 2150 N. Lincoln Park West, Chicago 14, Ill.

Co-Chairman: Mrs. E. M. Egan, 6741 S. Euclid Avenue, Chicago 49, Ill.

Public Relations: Mrs. R. M. Reynolds, 181 A View Avenue, Norfolk, Va.

Revisions: Mrs. Arthur A. Herold, 731 Oneonta Street, Shreveport, La.

Today's Health: Mrs. Richard F. Stover, 1631 N. W. 10th Street, Miami 35, Fla.

*American Medical Education Foundation: Mrs. Frank Gastineau, 5344 N. Pennsylvania Street, Indianapolis, Ind.

*Bulletin Circulation: Mrs. E. Arthur Underwood, 3725 Wauna Vista Drive, Vancouver, Wash.

*Civil Defense: Mrs. William Mackersie, 18205 Roselawn Avenue, Detroit 21, Mich.

*Mental Health: Mrs. Ross P. Daniel, 531 Woodlawn Avenue, Beckley, W. Va.

*Nurse Recruitment: Mrs. C. R. Pearson, 803 Birch Street, Baraboo, Wis.

*Reference: Mrs. Rollo K. Packard, 14093 Davana Terrace, Sherman Oaks, Calif.

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* Special Committees

PROCEEDINGS OF THE SAN FRANCISCO MEETING

ABSTRACT OF PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION AT THE ANNUAL MEETING IN SAN FRANCISCO, JUNE 21-25, 1954

(Continued from page 1261)

REPORT OF REFERENCE COMMITTEE ON CREDENTIALS

Dr. Walter E. Vest, Chairman, reported that 189 of a possible 190 delegates had been seated.

Invitation to Hold Annual Meeting in New York in 1957

Dr. Floyd S. Winslow, for the New York delegation, extended an invitation to the American Medical Association to hold its 1957 or 1958 annual meeting in the city of New York. The invitation was referred by the Speaker to the Board of Trustees for determination as to the adequacy of facilities available and report to the House.

Report on American Medical Education Foundation

Dr. Louis H. Bauer, Past President, presented the following report on the American Medical Education Foundation, which the Speaker ruled was informative and would not be referred to a reference committee:

For the first time since the American Medical Education Foundation was organized, the contributions totaled over a million dollars. In 1953, the contributions were $1,089,000. The Foundation is aiming at 2 million dollars from the medical profession, and hopes the National Fund will be able to raise 5 million from industry.

I am sorry to say that the progress has not been as rapid among the physicians as we had hoped. Of that $1,089,000, you must remember that the American Medical Association itself gave a half million dollars, plus the cost of the overhead in the organization, and that three state medical societies have compulsory assessments, the largest amount coming from Illinois, which amounted to about $160,000. So not everybody is doing everything they can to make this a success and protect our medical education from deteriorating in its standards. The number of contributors is increasing, but still slowly. I think the first year there were only 7,000 individual contributors. The last year there were about 18,000. So far, in the first 5½ months of this year, there have been a total of 12,000, which, if that rate continues, would increase it up to about 25,000 or 26,000 for this year. The dollar amounts, of course, have increased somewhat, but I think everybody who is interested in protecting the standards of medical education in this country ought really to get busy in his home area.

Motion to Change Time of Final Session of House

Dr. Joseph B. Copeland, Texas, moved, and the motion was duly seconded, that the final session of the House of Delegates, followed by the election of officers, be held at 9 a. m., Thursday, June 24, instead of at 1 p. m., as provided in the Order of Business. The Speaker referred the motion to the Reference Committe on Rules and Order of Business.

REPORT OF REFERENCE COMMITTEE ON RULES AND ORDER OF BUSINESS

Dr. Herbert B. Wright, Ohio, presented the following report, which was adopted:

Your reference committee approves and recommends adoption of the motion of Dr. Copeland of Texas that the final session of the House of Delegates, including the election of officers, be held at 9 o'clock in the morning, Thursday, June 24. As background for this approval, your committee would draw to the attention of the House Section 2 of Chapter XIV of the Bylaws, which reads as follows: "Officers of the Association shall be elected by the House on the afternoon of the fourth day of the annual session immediately following the final supplementary reports of the Board of Trustees and committees. The House may change the time of such election by appropriate motion made and acted on favorably by two-thirds of the delegates present and voting at least one day in advance of the date on which the election is to be held."

Korean Children's Choir

The House of Delegates was entertained for 15 minutes by the famous Korean Children's Choir, presented by Dr. Howard A. Rusk of the American-Korean Foundation. At the close of the singing, the members of the House expressed their appreciation to the Speaker for arranging this delightful entertainment.

Supplementary Report of Board of Trustees

Dr. Dwight H. Murray, Chairman, presented the following supplementary report:

INVITATIONS FOR 1957, 1958 AND 1959 ANNUAL MEETINGS

The Board wishes to report that for the 1957 and 1958 annual meetings of the Association invitations have been received from Atlantic City, New York, and San Francisco, and for the 1959 annual meeting, from Atlantic City. Accommodations in the three cities are adequate for a meeting of the Association.

For your information at this time, the 1955 and 1956 annual meetings are scheduled to be held in Atlantic City and Chicago, respectively. The clinical meetings already scheduled are as follows: 1954, Miami; 1955, Boston; and 1956, Seattle.

Dr. Robertson Ward, for the California delegation, extended the invitation to meet in San Francisco in 1958.

Dr. Percy E. Hopkins, for the Illinois delegation, invited the Association to hold its 1959 annual meeting in Chicago.

Dr. William F. Costello, for the New Jersey delegation, presented an invitation for the annual meeting to be held in Atlantic City in 1957 or 1958.

Dr. Floyd S. Winslow, New York, repeated the invitation extended previously for the annual meeting to be held in New York in 1957.

Selection of Annual Meeting Places in 1957, 1958, and 1959

On the basis of a standing vote, counted by the tellers, New York was selected as the place of the annual meeting in 1957, San Francisco in 1958, and Atlantic City in 1959.

Election of Affiliate Members

The following persons were elected to Affiliate Membership in the American Medical Association:

On nomination by the Judicial Council:

Dr. Fred W. Brenwald, Yaounde, French Cameroon, West Africa.
Dr. Edward C. Duerksen, Battle Creek, Mich.
Dr. Lowell Arthur Gess, Nigeria, Africa.
Dr. Siegfried Arthur Kotz, Makwasa, Nyasaland, Africa.
Dr. Hobart A. Reimann, Beirut, Lebanon.
Dr. Arnold J. Schneider, Tabriz, Iran.
Dr. Dunbar Wallace Smith, Surat, Bombay State, India.

Dr. Ernest W. Weiss, Cincinnati, Ohio.
Dr. Reeve H. Betts, Vellore, Madras, India.
Dr. Louis V. Sorrentino, Kurosawajiri, Japan.
Dr. George Penn Dillard Jr., Bethlehem, Hashemite, Jordan.
Dr. Kathleen Jones, Bandung, Indonesia.
Dr. Russell G. Birrell, Toronto, Canada.

On nomination by the Section on Experimental Medicine and Therapeutics:

S. Barton Sklar, Ph.D., New York.
Eddie Wolfe, Washington, D. C.

Donation to American Medical Education Foundation

On request of Dr. H. Gordon MacLean, California, the privilege of the floor was given Dr. Arlo A. Morrison, president of the California Medical Assoication, who, on behalf of the California Medical Association presented a check for $100,000 as a donation to the American Medical Education Foundation. The vice president of the Foundation, Dr. George F. Lull, accepted the check with an expression of appreciaiton.

Citation to Smith, Kline and French Laboratories

Dr. Walter B. Martin, President, presented to Mr. Francis Boyer, president of the Smith, Kline and French Laboratories, a plaque bearing the following citation:

"To Smith, Kline and French Laboratories for its pioneering use of television in bettering the health of the nation. Through color television programs for doctors, you have contributed immeasurably to increasing medical knowledge. Through your 'March of Medicine' programs, you have portrayed to the public the vital role of the doctor, both in the research laboratory and in his treatment of the sick. Because of these outstanding contributions to medicine, you have proved yourself deserving of this special recognition."

The plaque bore the signatures of the President of the American Medical Association and the Chairman of its Board of Trustees.

Messages of Congratulation

The Vice Speaker read messages of congratulation and best wishes for a successful meeting from Dr. Ho Sup Shim, president of the Korean Medical Association; Dr. Frank F. A. Rawling, president of the Academy of Medicine of Toledo and Lucas County, Ohio; Mr. A. T. Wayne, chairman of the All-American Conference to Combat Communism.

Election of Officers

The following officers were elected:

President-Elect: Dr. Elmer Hess, Erie, Pa.
Vice President: Dr. Clark Bailey, Harlan, Ky.
Secretary: Dr. George F. Lull, Chicago.
Treasurer: Dr. J. J. Moore, Chicago.
Speaker, House of Delegates: Dr. James R. Reuling, Bayside, N. Y.
Vice Speaker, House of Delegates: Dr. E. Vincent Askey, Los Angeles.
Members, Board of Trustees: Dr. David B. Allman, Atlantic City, N. J.; Dr. F. J. L. Blasingame, Wharton, Texas.
Member, Judicial Council: Dr. J. Morrison Hutcheson, Richmond, Va.
Members, Council on Medical Education and Hospitals: Dr. W. Andrew Bunten, Cheyenne, Wyo.; Dr. Charles T. Stone Sr., Galveston, Texas.
Members, Council on Medical Service: Dr. Joseph D. McCarthy, Omaha; Dr. Robert L. Novy, Detroit.

Dr. McCarthy was elected to succeed himself and Dr. Novy was elected to fill the unexpired term of Dr. Elmer Hess.

Member, Council on Constitution and Bylaws: Dr. Floyd S. Winslow, Rochester, N. Y.

Appreciation of Dr. Edward R. Cunniffe

Dr. Walter B. Martin, President, made the following statement regarding the retirement of Dr. Edward R. Cunniffe as a member of the Judicial Council:

Mr. Speaker, Members of the House of Delegates: I would like to make a statement to the House in reference to the nomination for the Judicial Council. As you all know, Dr. Cunniffe has served in the Judicial Council for many years, nineteen, I believe, to be exact. He has been a very able and devoted member of that Council and has rendered great service to this House. He requested, in a discussion I had with him yesterday, that his name not be presented to the House, so there was a vacancy in that position. I want to take this opportunity to express to you my feeling of the great service that he has rendered to you over a period of many years.

Dr. J. Stanley Kenney, New York, made the following statement:

In behalf of the Medical Society of the State of New York, I want to place on the record the deep appreciation on the part of the New York delegation of the services of Dr. Edward R. Cunniffe to this House of Delegates and to his state society. It would be most fitting that we record for posterity on these minutes our deep appreciation of all he has done for organized medicine.

Dr. Dwight H. Murray, Chairman, Board of Trustees, for the record, said:

Speaking for the Board of Trustees, I would like to commend Dr. Cunniffe on the work that he has done for American medicine for many years. We on the Board, of course, have to depend very largely on the advice from our various councils, and we have surely appreciated Dr. Cunniffe's work as chairman of the Judicial Council.

REPORT OF REFERENCE COMMITTEE ON RULES AND ORDER OF BUSINESS

Dr. Herbert B. Wright, Chairman, presented the following report, which was adopted:

Your Reference Committee on Rules and Order of Business, acting for the House of Delegates, wishes to express commendation and appreciation to the various councils, committees, persons, and organizations whose untiring and unselfish efforts have contributed so much toward making this, the 103rd Annual Meeting of our Association, a success.

Your reference committe moves that a sincere vote of thanks and appreciation be extended to the Local Committee on Arrangements, under the chairmanship of Dr. Edmund J. Morrissey, for the efficient manner in which the meeting has been planned; to the continuing assistance of the California Medical Association, the San Francisco Medical Society and their respective auxiliaries whose efforts have contributed so greatly to the smooth operation of the convention, and the comfort of all in attendance; to the Secretary's Office and staff, under the capable direction of Dr. Lull, as well as to the various councils and bureaus and staff of the headquarters office whose combined untiring efforts have insured the success of the meeting; to the San Francisco Convention and Visitors Bureau and the responsible officials in the city of San Francisco who have made our stay here so pleasant; to the television and radio networks and the newspapers for their excellent coverage of the activities of our Association; to the various councils and reference committees of this House of Delegates for their diligent studies of the many resolutions and reports referred to them; to the scientific sections for their excellent programs and to all the exhibitors, both scientific and commercial, for their valuable contributions; and finally, to the Speaker and Vice Speaker of the House of Delegates for their efficient and judicious handling of the proceedings of the House.

The House adjourned sine die at 11.45 a. m., Thursday, June 24.

MINUTES OF THE SCIENTIFIC SECTIONS

SECTION ON ANESTHESIOLOGY

Tuesday, June 22—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Moses H. Krakow, Bronx, N. Y.

A business meeting was held, and a resolution was discussed by the chairman that referred to residency training of foreign educated physicians. The exhibitors were introduced.

Dr. Daniel C. Moore, Seattle, read a paper on "The Importance of the Perineural Spaces of the Peripheral Nerves in Nerve Block." The paper was discussed by Drs. F. A. Duncan Alexander, McKinney, Texas, and Victor H. Kuenkel, Los Angeles.

Dr. F. Paul Ansbro, Dr. Albert E. Blundell and Dr. Joseph C. Sweeney Jr., Brooklyn, presented a paper on "Comparison of Newer Anesthetic Agents Used in Epidural Block for Abdominal Surgery," which was discussed by Drs. Charles D. Anderson, Oakland, Calif., W. Allen Conroy, San Rafael, Calif., and Daniel C. Moore, Seattle.

Dr. Henry S. Ruth presented the report of the section delegate.

Dr. William A. O'Brien III, Reno, Nev., read a paper on "The Anesthesiologist, the Polio Team, and the Respirator." The paper was discussed by Drs. William K. Nowill, Durham, N. C., and Kenneth C. McCarthy, Toledo, Ohio.

Dr. Russell L. Drake, Rochester, Minn., read a paper on "The Value of Illustration in Medical Writing."

Dr. Richard M. Hewitt, Rochester, Minn., read a paper on "Exposition as Applied to Medicine: A Glance at the Ethics of It."

The papers of Dr. Drake and Dr. Hewitt were discussed by Drs. Henry S. Ruth, Philadelphia, and Jay A. Myers, Minneapolis.

Wednesday, June 23—Afternoon

The following officers were elected: chairman, Dr. Ralph S. Sappenfield, Miami, Fla.; vice chairman, Dr. Leo J. Fitzpatrick, West Englewood, N. J.; secretary, Dr. John S. Lundy, Rochester, Minn.; delegate, Dr. Rolland J. Whitacre, Cleveland; alternate delegate, Dr. E. B. Tuohy, Los Angeles; nominees to the American Board of Anesthesiology, Drs. Lloyd E. Larrick, Cincinnati, Scott M. Smith, Salt Lake City, and Wallace A. Reed, Phoenix, Ariz.

Drs. Joseph H. Pratt Jr. and John S. Welch, Rochester, Minn., presented a paper on "The Use of Hyatrobal and Methadon in the Preoperative Preparation of Patients." The paper was discussed by Drs. John M. MacKinnion, Seattle, and Hugh A. Cunningham, Santa Barbara, Calif.

Dr. John E. Osborn, Rochester, Minn., read a paper on "Anesthesia for Neurosurgical Procedures," which was discussed by Drs. Scott M. Smith, Salt Lake City, and Wallace A. Reed, Phoenix, Ariz.

Dr. Moses H. Krakow, Bronx, N. Y., read his Chairman's Address, entitled "Anesthesia Then and Now: 1914-1954."

Dr. Carl E. Wasmuth, Cleveland, presented a paper on "Thiopental Anesthesia in Infants and Children." This paper was discussed by Drs. Hugh O. Brown, Salt Lake City, and John L. Cardwell, San Francisco.

Dr. Joseph H. Artusio Jr., New York, read a paper on "Di-Ethyl Ether Analgesia on the Conscious Patient During Major Surgery," which was discussed by Drs. John B. Dillon, Alhambra, Calif., and Bruce M. Anderson, Oakland, Calif.

Friday, June 25—Morning

A joint meeting was held with the Section on General Practice and the Section on Military Medicine. The proceedings are reported in the minutes of the Section on General Practice.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

Wednesday, June 23—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. George M. Lewis, New York.

A business meeting was held during which Dr. Samuel M. Bluefarb, Chicago, read the report of the section representative to the scientific exhibit, which was approved; Dr. Nelson Paul Anderson, Los Angeles, read the report of the American Board of Dermatology and Syphilology, which was approved; and Dr. Francis W. Lynch, St. Paul, read the report of the nominating committee.

Dr. Karl Steiner, Brooklyn, read a paper on "Hidradenitis Suppurativa of the Adult and Its Management," by himself and Dr. Leonard D. Grayson, Brooklyn. This paper was discussed by Drs. Harold Price, North Hollywood, Calif., and Thomas B. Hall, Kansas City, Mo.

A paper on "Pre-Columbian Osseous Syphilis Found at Kinishba and Vandal Cave, Arizona," by Drs. Harold N. Cole, James C. Harkin and Alan R. Moritz, Cleveland, and Bertram S. Kraus, Tucson, Ariz., was read by Dr. Cole and was discussed by Drs. Norman N. Epstein, San Francisco, and William Curth, New York.

Dr. Carl W. Laymon, Minneapolis, read a paper on "Lipomelanic Reticulosis," by himself and Dr. Robert Jackson, Minneapolis. This paper was discussed by Drs. Maximilian E. Obermayer, Los Angeles, Samuel M. Bluefarb, Chicago, Reece E. Reese, San Francisco, Ernest Potts, Oceanside, Calif., and Hamilton Montgomery, Rochester, Minn.

Dr. Harry M. Robinson Sr., Baltimore, read a paper on "A Treatment for 'Stasis' Ulcers," which was discussed by Dr. Eugene M. Farber, San Francisco.

Dr. Samuel Ayres III, and Dr. Samuel Ayres Jr., Los Angeles, presented a paper on "Chloroquine in the Treatment of Lichen Planus and Certain Other Dermatoses." Discussion on this paper was by Dr. Robert R. Kierland, Rochester, Minn.

A paper on "Common Errors in the Diagnosis and Therapy of Certain Dermatoses of the Vulva," by Drs. Eugene P. Schoch Jr., and C. Hal McCuistion, Austin, Texas, was read by Dr. Schoch and was discussed by Drs. Walter C. Herold, Colorado Springs, Colo., and Francis W. Lynch, St. Paul, Minn.

Thursday, June 24—Morning

The following officers were elected: chairman, Dr. Everett C. Fox, Dallas, Texas; vice chairman, Dr. Harry M. Robinson Sr., Baltimore; representative to American Board of Dermatology and Syphilology for 2 years, Dr. Beatrice M. Kesten, New York.

Dr. James A. Philpott, Jr., Denver, read a paper on "Incontinentia Pigmenti," by himself and Drs. Osgoode S. Philpott and Arthur R. Woodburne, Denver. This paper was discussed by Drs. Samuel W. Becker, Chicago, and Helen O. Curth, New York.

Dr. George M. Lewis, New York, read the Chairman's Address, entitled "Evolution, Revolution, and Board Certification."

Dr. Theodore Cornbleet, Chicago, read a paper on "The Action of Heparin on Xanthoma," which was discussed by Drs. Francis W. Lynch, St. Paul, and Franz S. M. Herbst, Boston.

A paper on "The Ritter and Oleson Staining Method for the Demonstration of Fungi in Paraffin Sections," by Drs. Edward P. Cawley and Clayton E. Wheeler, Charlottesville, Va., J. F. A. McManus, Birmingham, Ala., and A. James French, Ann Arbor, Mich., was read by Dr. Cawley, and was discussed by Dr. Albert M. Kligman, Philadelphia.

Dr. Edward L. Laden, Inglewood, Calif., read a paper on "The Study of Normal Skin by the Electron Microscope," by himself and Drs. Irwin Linden and John O. Erickson, Los Angeles. A discussion of this paper, prepared by Dr. Walter C. Lobitz Jr., Hanover, N. H., was read by Dr. J. Walter Wilson, Los Angeles.

Dr. Jan Schwarz, Cincinnati, read a paper on "An Epidemiologic Study of North American Blastomycosis," by himself and Dr. Leon Goldman, Cincinnati. This paper was discussed by Drs. Arthur C. Curtis, Ann Arbor, Mich., J. Walter Wilson, Los Angeles, and Harry M. Robinson Sr., Baltimore.

Friday, June 25—Morning

Dr. Robert R. Kierland, Rochester, Minn., presented the report of the section delegate to the House of Delegates.

Dr. Frederick J. Szymanski and Dr. Marcus R. Caro, Chicago, presented a paper on "Pseudoxanthoma Elasticum: A Review of Its Relationship to Internal Diseases: A Report of an Unusual Case," which was discussed by Drs. A. Bunsen Lerner, Portland, Ore., George M. Lewis, New York, and Marcus R. Caro, Chicago.

A Dermatologic Clinico-Pathologic Conference, A Sample of the Proceedings of the Pacific Dermatological Society, was presented, under the direction of Dr. Walter R. Nickel, San Diego, with Dr. Herman Beerman, Philadelphia, as moderator. Participating were Drs. Paul Fasal, San Francisco; Thomas S. Saunders, Portland, Ore.; Robert A. Pommerening, Seattle; Nelson Paul Anderson, Los Angeles; George T. Wilson, Palo Alto, Calif.; and R. Gordon MacDonald, Riverside, Calif.

Dr. William J. Morginson, Salt Lake City, read a paper on "Knuckle Pads," which was discussed by Drs. Clarence S. Livingood, Detroit, Marcus R. Caro, Chicago, and Hamilton Montgomery, Rochester, Minn.

Dr. Samuel M. Bluefarb, Chicago, read a paper on "Is Mycosis Fungoides a Clinical and Pathologic Entity?" This paper was discussed by Drs. George A. Waldriff, Albuquerque, N. Mex., and Hamilton Montgomery, Rochester, Minn.

Dr. Eugene S. Bereston, Baltimore, read a paper on "Selenium Sulfide Suspension in the Treatment of Seborrheic Dermatitis of the Scalp: A Three-Year Study of 250 Cases." This paper was discussed by Drs. James R. Webster, Chicago, (read by the secretary of the section) and Samuel Ayres Jr., Los Angeles.

SECTION ON DISEASES OF THE CHEST

Wednesday, June 23—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Jay A. Myers, Minneapolis.

There was a panel discussion on "Diagnosis and Treatment of Chronic Coronary Heart Disease," of which Dr. Robert L. King, Bellevue, Wash., was moderator and Drs. E. Cowles Andrus, Baltimore, William Paul Thompson, Los Angeles, and Francis L. Chamberlain, San Francisco, were participants.

Dr. George C. Griffith, Pasadena, Calif., was moderator of a panel discussion on "The Use and Abuse of Anticoagulant Therapy." The participants were Drs. Walter F. Kvale, Rochester, Minn., Charles D. Marple, New York, Henry I. Russek, Staten Island, N. Y., and Sidney Schnur, Houston, Texas.

Thursday, June 24—Morning

The following officers were elected for the coming year: chairman, Dr. Andrew L. Banyai, Milwaukee; vice chairman, Dr. Edward W. Hayes, Monrovia, Calif.; secretary, Dr. John F. Briggs, St. Paul, Minn.; delegate, Dr. Hollis E. Johnson, Nashville, Tenn.; alternate delegate, Dr. J. Winthrop Peabody, Washington, D. C.; representative to the Scientific Exhibit, Dr. Edwin R. Levine, Chicago.

A joint meeting was held with the Section on Radiology, and the proceedings are reported in the minutes of that section.

Friday, June 25—Morning

Dr. Jay A. Myers, Minneapolis, read his Chairman's Address, entitled "Tuberculosis Among Physicians."

There was a panel discussion on "Treatment of Nontuberculous Chest Diseases," of which Dr. Burgess L. Gordon, Philadelphia, was moderator. The participants were Dr. Alvan L. Barach, New York, who read a paper on "Physiological Aspects of Nontuberculous Chest Diseases"; Dr. Gerald L. Crenshaw, Oakland, Calif., who read a paper on "Surgical Management of Degenerative Lung Disease."

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

Tuesday, June 22—Afternoon

The meeting was called to order at two o'clock by the chairman, Dr. Irvine H. Page, Cleveland.

Dr. Louis G. Welt, Chapel Hill, N. C., read a paper on "Renal Factors In Regulation of Electrolyte Balance," which was discussed by Dr. James Hopper, San Francisco.

Dr. T. S. Danowski, Pittsburgh, read a paper on "The Problem of Hypokalemia." This paper was discussed by Dr. Kalman A. Kinghoffer, San Francisco.

Dr. Elliot V. Newman of Nashville, Tenn., read a paper on "The Hyponatremic Syndrome," which was discussed by Dr. C. Thorpe Ray, New Orleans, and Helen E. Martin, Los Angeles.

Dr. John A. Luetscher Jr., San Francisco, read a paper on "Problems of Electrolyte and Water Balance in the Nephrotic Syndrome," which was discussed by Dr. Carolyn Piel, San Francisco.

Dr. Donald W. Seldin, Dallas, Texas, read a paper on "Management of Congestive Heart Failure Designed to Avoid Serious Disturbances of Electrolyte and Water Balance." This paper was discussed by Dr. Laurance W. Kinsell, Oakland, Calif.

Wednesday, June 23—Afternoon

The following officers were elected: chairman, Dr. Hugh R. Butt, Rochester, Minn.; vice chairman, Dr. Thomas P. Findley Jr., Augusta, Ga.; secretary, Dr. George E. Burch, New Orleans; delegate, Dr. Edgar V. Allen, Rochester, Minn.; alternate delegate, Dr. Robert D. Taylor, Cleveland; representative to Scientific Exhibit, Dr. Joseph F. Ross, Boston.

Dr. Irvine H. Page, Cleveland, read his Chairman's Address, "The Dilemma's Horns."

Dr. John S. Lawrence, Los Angeles, presented the Minot Lecture: "Physiology and Function of the White Blood Cells."

Drs. J. Park Biehl and Richard W. Vilter, Cincinnati, presented a paper on "Effects of Isoniazid on Pyridoxine Metabolism," which was discussed by Drs. Louis Greenberg and H. Corwin Hinshaw, San Francisco.

Drs. Arthur J. Merrill and Joseph S. Wilson, Atlanta, Ga., read a paper, "Continuous ACTH Therapy of the Nephrotic Syndrome," which was discussed by Dr. Meyer W. Friedman, San Francisco.

Drs. Alexander B. Gutman and T. F. Yu, New York, read a paper, "Prevention and Treatment of Chronic Gouty Arthritis." This paper was discussed by Dr. William C. Kuzell, San Francisco.

Drs. Myron Prinzmetal, S. Rexford Kennamer, Alfred Goldman, Louis Rakita, and Jean-Louis Borduas, Los Angeles, presented a paper, "The Nature of Spontaneous Auricular Fibrillation in Man," which was discussed by Drs. Franklin D. Johnston, Ann Arbor, Mich., and Hans H. Hecht, Salt Lake City.

THURSDAY, JUNE 24—AFTERNOON

A joint meeting was held with the Section on Internal Medicine. The minutes of this meeting appear in the minutes of the Section on Internal Medicine.

SECTION ON GASTROENTEROLOGY AND PROCTOLOGY

TUESDAY, JUNE 22—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Donovan C. Browne, New Orleans.

Dr. M. E. Steinberg, Portland, Ore., read his paper entitled "Surgical Management of Disabling Postanastomotic and Postgastrectomy Side Effects." This paper was discussed by Drs. David J. Sandweiss, Detroit, Joel W. Baker, Seattle, and Dr. Steinberg.

A paper entitled "The Seasonal Incidence of Hemorrhage from Gastric and Duodenal Ulcer, with Some Critical Comments on Prevention and Treatment," by Drs. Russell S. Boles and Maxwell P. Westerman, Philadelphia, was read by Dr. Boles.

A paper entitled "The Test of Transfusion as Applied to Postoperative Bleeding," by Drs. Elmer Milch, William F. Lipp, and A. H. Aaron, Buffalo, N. Y., was read by Dr. Milch.

The papers of Drs. Boles and Westerman and Dr. Milch et al were discussed by Drs. Sara M. Jordan, Boston, Theodore L. Althausen, San Francisco, Keith S. Grimson, Durham, N. C., Gordon McHardy, New Orleans, and Drs. Boles and Milch.

A panel on liver injury was conducted, with Dr. Albert M. Snell, Palo Alto, Calif., as moderator, and with the following participants: Drs. Hugh R. Butt, Rochester, Minn.; Chester M. Jones, Boston; Robert M. Kark, Chicago; and V. M. Sborov, San Francisco.

WEDNESDAY, JUNE 23—AFTERNOON

The following officers were elected: chairman, Dr. Harry E. Bacon, Philadelphia; vice chairman, Dr. Lowell D. Snorf, Evanston, Ill.; secretary, Dr. Everett D. Kiefer, Boston; representatives to the Scientific Exhibit, Drs. William H. Dearing, Rochester, Minn., and J. P. Nesselrod, Evanston, Ill.; delegate, Dr. Louis A. Buie, Rochester, Minn.; alternate delegate, Dr. Stuart T. Ross, Hempstead, N. Y.; nominee to American Board of Proctology, Dr. Walter A. Fansler, Minneapolis.

Dr. Raymond J. Jackman, Rochester, Minn., presented his paper entitled "Chronic Ulcerative Colitis: Management of Anorectal Complications." This paper was discussed by Drs. Malcolm R. Hill, Los Angeles; Robert A. Scarborough, San Francisco; and Dr. Jackman.

Dr. Donovan C. Browne, New Orleans, presented the Chairman's Address entitled "Portal Hypertension in Gastric Hemorrhage."

A paper entitled "Postcholecystectomy Oral Cholangiography," by Drs. J. Russell Twiss, Samuel L. Beranbaum, Lee Gillette, and Maxwell H. Poppel, New York, and Dr. Eilif C. Hanssen, Pasadena, Calif., was read by Dr. Gillette, and was discussed by Drs. Walter L. Voegtlin, Seattle; J. E. Berk. Philadelphia; and Dr. Gillette.

A paper entitled "The Adrenal, Gastric-Secretion and Peptic Ulcer," by Drs. Basil J. Hirschowitz and H. Marvin Pollard, Ann Arbor, Mich., was read by Dr. Hirschowitz, and was discussed by Dr. Seymour J. Gray, Boston, and Dr. Hirschowitz.

A Panel on Pancreatitis was conducted, with Dr. A. H. Aaron, Buffalo, as moderator and with the following participants: Drs. Mandred W. Comfort, Rochester, Minn., Robert Elman, St. Louis, John B. Hazard, Cleveland, Harold G. Jacobson, New York, and Alexander G. Rogerson, Berkeley, Calif.

THURSDAY, JUNE 24—AFTERNOON

Joint Meeting with Section on Pathology and Physiology

A Panel on Constricting Lesions of the Esophagus was conducted, with Dr. Herman J. Moersch, Rochester, Minn., as moderator, and with the following participants: Diagnosis, Dr. N. C. Hightower, Temple, Texas; Pathology, Dr. Samuel A. Levinson, Chicago; Therapy, Drs. Dwight L. Wilbur, San Francisco, and Alton Ochsner, New Orleans.

A paper entitled "Clinical, Pathologic, and Therapeutic Aspects of Hemochromatosis," by Drs. Martin S. Kleckner Jr., Chicago; A. Zerne Chapman, Evanston, Ill.; Ervin Kaplan, Hines, Ill.; Robert M. Kark, Chicago; and Lyle A. Baker, Hines, Ill., was read by Dr. Kleckner. This paper was discussed by Drs. Hans Popper, Chicago; Clement A. Finch, Seattle; Theodore L. Althausen, San Francisco; and Dr. Kleckner.

A paper entitled "Regional Ileitis: Twenty Years Later," by Drs. Burrill B. Crohn and Henry D. Janowitz, New York, was read by Dr. Crohn, and was discussed by Drs. J. Arnold Bargen, Rochester, Minn.; Russell S. Boles, Philadelphia; and Dr. Crohn.

A paper entitled "The Small Gastric Cancer." by Drs. Mandred W. Comfort, Howard K. Gray, and Robert T. Gage, Rochester, Minn.; George R. Dornberger, Fort Lauderdale, Fla.; Jorge Solis, Mexico City, Mexico; Dean P. Epperson, Milwaukee; and Robert A. McNaughton, Miami, Fla., was read by Dr. Gage. This paper was discussed by Drs. John H. Fitzgibbon, Portland, Ore., Harold L. Thompson, Los Angeles, and Dr. Comfort.

Dr. Lyon H. Appleby, Vancouver, B. C., Canada, read his paper entitled "Unusual Lesions of the Small Bowel," which was discussed by Dr. I. Davidsohn, Chicago, and Dr. Appleby.

SECTION ON GENERAL PRACTICE

WEDNESDAY, JUNE 23—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Frederic Ewens, Manhattan Beach, Calif.

The delegate's report was presented by Dr. Paul A. Davis, Akron, Ohio.

Dr. E. Grey Dimond, Kansas City, Kan., read his paper entitled "The General Practitioner and the Medical School."

A Panel Conference and Symposium on Pitfalls in Everyday Surgery: Diagnosis and Treatment was conducted by Dr. Philip Thorek, Chicago, moderator. The participants included: Drs. Roger Anderson, Seattle; Claude J. Hunt, Kansas City, Mo.; Arnold S. Jackson, Madison, Wis.; A. Neal Owens, New Orleans; Peter A. Rosi, Chicago; Kenneth C. Sawyer, Denver; Waltman Walters, Rochester, Minn.

THURSDAY, JUNE 24—MORNING

The following officers were elected: chairman, Dr. Lowry H. McDaniel, Tyronza, Ark.; vice chairman, Dr. I. Philips Frohman, Washington, D. C.; secretary, Dr. Eugene I. Baumgartner, Oakland, Md.; delegate, Dr. Lester D. Bibler, Indianapolis; alternate delegate, Dr. Milton B. Casebolt, Kansas City, Mo.

Dr. Frederic Ewens, Manhattan Beach, Calif., read the Chairman's Address, entitled "Surgical Evaluation Committee and How It Works."

Dr. Arthur M. Master read a paper entitled "Survival and Rehabilitation Following Coronary Occlusion" by Drs. Arthur M. Master and Harry L. Jaffe, New York.

Dr. Arnold H. Kegel, Los Angeles, read his paper entitled "The Nonsurgical Treatment of Genital Relaxation."

Dr. Lewis J. Doshay, New York, read his paper entitled "Problem Situations in the Treatment of Parkinsonism."

Dr. Robert J. Needles, St. Petersburg, Fla., read his paper entitled "Functional Illness: Medical Enigma."

Dr. Campbell Moses, Pittsburgh, read his paper entitled "Common Misconceptions about the Roles of Drugs in the Prevention and Treatment of Atherosclerosis."

Dr. Sol Roy Rosenthal, Chicago, read his paper entitled "On the Standardization and Efficacy of BCG Vaccination against Tuberculosis."

Dr. Robert C. Batterman read a paper entitled "The Treatment of Congestive Heart Failure and Anginal Syndrome with Choline Theophyllinate" by Drs. Robert C. Batterman and Arthur J. Grossman, New York; Julius Schwimmer, Welfare Island, N. Y.; and Allan L. Blackman, New York.

FRIDAY, JUNE 25—MORNING

Joint Meeting with Section on Anesthesiology and Section on Military Medicine

Dr. Windsor C. Cutting, San Francisco, read his paper entitled "A Critical Appraisal of Pain-Relieving Drugs." This paper was discussed by Drs. Frederick P. T. Haugen, Portland, Ore., Carroll B. Andrews, Sonoma, Calif., and Scott Whitehouse, Oakland, Calif.

Dr. Edward B. Tuohy, Los Angeles, read his paper entitled "The Use of Analgesics and Anesthetics for the Relief of Pain," which was discussed by Drs. Rolland J. Whitacre, Cleveland, Donald M. Campbell, San Francisco, Robert E. Lau, Washington, D. C., F. A. Duncan Alexander, McKinney, Texas, and Walter H. MacDougall, Oswego, Ore.

Dr. Allen S. Russek, New York, read his paper entitled "The Role of Physical Medicine in the Relief of Certain Pain Mechanisms." This paper was discussed by Drs. Francis J. Murphy, San Francisco, Daniel Beltz, Los Angeles, Raoul Psaki, San Francisco, and Frank S. Zach, Vienna, Austria.

Dr. Lucian A. Smith, Rochester, Minn., read his paper entitled "The Pattern of Pain in the Diagnosis of Upper Abdominal Disorders," which was discussed by Drs. Charles J. Betlach, Santa Barbara, Calif., and Charles F. Nelson, Beverly Hills, Calif.

Col. Harvey C. Slocum, Washington, D. C., read his paper entitled "Problems of Over-Treatment of Surgical Casualties with Depressant Drugs." This paper was discussed by Drs. Stevens J. Martin, Hartford, Conn., and A. J. Franzi, San Francisco.

SECTION ON INTERNAL MEDICINE

TUESDAY, JUNE 22—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Herrman L. Blumgart, Boston.

Dr. George N. Bedell read a paper entitled "Medical Management of Patients with Mitral Stenosis Before, During, and After Mitral Valvuloplasty" by Drs. George N. Bedell, James W. Culbertson, and Johann L. Ehrenhaft, Iowa City. This paper was discussed by Drs. Howard P. Lewis, Portland, Ore., and William Likoff, Philadelphia.

Dr. F. Henry Ellis Jr. read a paper entitled "The Relation of Immediate and Late Hemodynamic Effects of Mitral Commissurotomy to Clinical Findings and Symptomatic Improvement," by Drs. F. Henry Ellis Jr., John W. Kirklin, H. B. Burchell, R. L. Parker, and E. H. Wood, Rochester, Minn. This paper was discussed by Drs. E. Cowles Andrus, Baltimore, and John J. Sampson, San Francisco.

Dr. Philip S. Hench, Rochester, Minn., presented the Billings Lecture, entitled "The Cortisones and Corticotropins in General Medicine."

Dr. Paul S. Rhoads, Chicago, read a paper entitled "Effect of Preoperative Treatment with Antibiotics on Post-Tonsillectomy Bacteremia and on Bacterial Content of Excised Tonsils" by Drs. Paul S. Rhoads, Chicago, John R. Sibley, Hanover, N. H., and Carl E. Billings, Chicago. This paper was discussed by Drs. Lowell A. Rantz, San Francisco, and William M. M. Kirby, Seattle.

Dr. Howard F. Root, Boston, read his paper entitled "Diabetic Triopathy: Retinopathy, Neuropathy, and Nephropathy in Relation to the Control of Diabetes," which was discussed by Drs. Henry T. Ricketts, Chicago, and Lester J. Palmer, Seattle.

Dr. Louis G. Moench, Salt Lake City, read his paper entitled "Reaction of the Medical Patient to Hospitalization." This paper was discussed by Dr. Dwight L. Wilbur, San Francisco, and a discussion prepared by Dr. Abram E. Bennett, Berkeley, Calif., was read by Dr. R. E. Turk, Berkeley, Calif.

WEDNESDAY, JUNE 23—AFTERNOON

The following officers were elected: chairman, Dr. Howard P. Lewis, Portland, Ore.; vice chairman, Dr. Benjamin M. Baker, Jr., Baltimore; secretary, Dr. A. Carlton Ernstene, Cleveland; delegate, Dr. Charles T. Stone Sr., Galveston, Texas; alternate delegate, Dr. William D. Stroud, Philadelphia; representative to Scientific Exhibit, Dr. Garfield G. Duncan, Philadelphia.

Dr. Eugene R. Kutz read a paper entitled "Radioactive Isotopes and Carcinomatosis of Serous Body Cavities" by Drs. Edward M. Kent, Campbell Moses, William B. Ford, and Eugene R. Kutz, Pittsburgh. This paper was discussed by Drs. John H. Lawrence, Berkeley, Calif., Ralph M. Kniseley, Oak Ridge, Tenn., and Henry L. Jaffe, Los Angeles.

Dr. Clement A. Finch, Seattle, read his paper entitled "Treatment of Iron Deficiency Anemia," which was discussed by Drs. Willis M. Fowler, Iowa City, and Bruce K. Wiseman, Columbus, Ohio.

Dr. Herrman L. Blumgart read the Chairman's Address entitled "The Treatment of Incapacitated Euthyroid Cardiac Patients with Radioactive Iodine: Summary of Results in Treatment of 1.070 Patients with Angina Pectoris or Congestive Failure in 34 Clinics" by Drs. Herrman L. Blumgart, A. Stone Freedberg, and George S. Kurland, Boston. This paper was discussed by Drs. Henry L. Jaffe, Los Angeles, and William R. Reilly, San Francisco.

Dr. Erwin Levin read a paper entitled "Observations on the Diagnosis, Treatment, and Course of Gastric Ulcer," by Drs. Erwin Levin, Cleveland, and Walter L. Palmer and Joseph B. Kirsner, Chicago. This paper was discussed by Drs. Albert M. Snell, Palo Alto, Calif., and Theodore L. Althausen, San Francisco.

Dr. Conger Williams read a paper entitled "Pericardial Tamponade: Its Diagnosis and Treatment" by Drs. Conger Williams and Lamar Soutter, Boston, which was discussed by Drs. George C. Griffith, Pasadena, Calif., and Claude S. Beck, Cleveland.

Dr. Raymond W. Monto read a paper entitled "Recent Advances in the Treatment of Pernicious Anemia" by Drs. Raymond W. Monto, J. W. Rebuck, and J. T. Howell, Detroit. This paper was discussed by Drs. Tom D. Spies, Birmingham, Ala., Maurice Leonard, San Francisco, and Joseph F. Ross, Boston.

THURSDAY, JUNE 24—AFTERNOON

Joint Meeting with Section on Experimental Medicine and Therapeutics

Dr. Russell J. Blattner, Houston, Texas, read his paper entitled "Progress in the Clinical Diagnosis of Poliomyelitis," which was discussed by Drs. William A. Reilly, San Francisco, and James F. Bosma, Salt Lake City.

Dr. Thomas H. Weller, Boston, read his paper entitled "Advances in the Laboratory Diagnosis of Poliomyelitis," which was discussed by Dr. Edwin H. Lennette, Berkeley, Calif.

Dr. William McD. Hammon read a paper entitled "Gamma Globulin and the Prevention of Poliomyelitis" by Drs. William McD. Hammon, Pittsburgh; Lewis L. Coriell, Camden, N. J.; E. H. Ludwig, Pittsburgh; R. M. McAllister, Philadelphia; Gladys

Sather, Pittsburgh; and P. F. Wehrle, Baltimore. This paper was discussed by Drs. Henry D. Brainerd and C. Henry Kempe, San Francisco.

Dr. John E. Affeldt, Hondo, Calif. read his paper entitled "Recent Advances in the Treatment of Poliomyelitis," which was discussed by Drs. Edward B. Shaw, San Francisco, Albert G. Bower, Pasadena, Calif., and Frederick M. Allen, New York.

Dr. John R. Paul, New Haven, Conn., read his paper entitled "Practical Considerations with Regard to Vaccination in Poliomyelitis." This paper was discussed by Drs. Charles A. Evans, Seattle, and Albert B. Sabin, Cincinnati.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Wednesday, June 23—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Sam H. Sanders, Memphis, Tenn.

Dr. Edward C. Sewall, Stanford, Calif., was introduced as the honorary chairman, and he presented his prepared remarks.

Dr. Fernando G. Santamarina, Havana, Cuba, read his paper on "Practical Office Audiology," which was discussed by Drs. Victor Goodhill, Los Angeles, and R. E. Douglas, Oakland, Calif.

Dr. Manuel R. Wexler, Los Angeles, read his paper on "Submucous Resection of Nasal Septum in Children: Indications, Problems, and Procedures." This paper was discussed by Drs. Russell I. Williams, Cheyenne, Wyo., and Allen H. Sherman, San Francisco.

Dr. Joseph L. Goldman, New York, read his paper on "Modern Concepts in Otolaryngological Diagnosis and Therapy," which was discussed by Drs. Ray M. Moose, San Bernardino, Calif., and R. M. Decker, Pasadena, Calif.

Dr. Lester A. Brown, Atlanta, Ga., read his paper on "Glomus Jugulare Tumor of the Middle Ear: Clinical Aspects." This paper was discussed by Drs. J. Milton Robb, Detroit, Frederic A. Figi, Rochester, Minn., and Robert C. McNaught, San Francisco.

Dr. Aubrey G. Rawlins, San Francisco, read his paper on "ACTH and Cortisone in Otolaryngology," which was discussed by Drs. C. F. Lake, Rochester, Minn., and French K. Hansel, St. Louis.

Thursday, June 24—Morning

The following officers were elected: chairman, Dr. Francis W. Davison, Danville, Pa.; vice chairman, Dr. Guy L. Boyden, Portland, Ore.; secretary, Dr. Hugh A. Kuhn, Hammond, Ind.; delegate, Dr. Gordon F. Harkness, Davenport, Iowa; representative to Scientific Exhibit, Dr. Walter E. Heck, San Francisco.

Dr. Wadsworth Warren, Detroit, read a paper on "Tracheotomized Child: Wetting Agents" which was discussed by Drs. Alden H. Miller, Los Angeles, J. Milton Robb, Detroit, Roland Marks, Orenda, Calif., D. H. Anthony, Memphis, Tenn., John Kruglick, Phoenix, Ariz., and Paul H. Holinger, Chicago.

Dr. Sam H. Sanders, Memphis, Tenn., read the Chairman's Address entitled "The Problem Nose Child."

Dr. William H. Evans, Youngstown, Ohio, read a paper on "Office Treatment and Management in an Otolaryngologist's Office," which was discussed by Drs. Rea E. Ashley, San Francisco, Glenn J. Greenwood, Los Angeles, and D. H. Anthony, Memphis, Tenn.

Chairman Sanders read a letter from a physician in Texas, suggesting that the company manufacturing Calgonite be required to label it as either poison, corrosive, or classed with substances covered in legislation formulated by the section's committee. Dr. Greenwood moved that, if the substance was a caustic agent, the proper authorities, the Food and Drug Administration, be instructed to so label it and caution the public against its use. The motion was seconded and carried. Dr. Robb moved that a committee comprised of Drs. Sam H. Sanders and Glenn J. Greenwood be appointed to investigate the matter. The motion was seconded and carried.

Friday, June 25—Morning

Dr. Gordon F. Harkness gave the report of the section delegate to the House of Delegates.

Dr. Richard E. Marcus, Los Angeles, read a paper on "Rehabilitation of the Deaf Child," which was discussed by Drs. Robert C. McNaught, San Francisco, and C. Morley Sellery, Los Angeles.

Dr. L. Q. Pang, Honolulu, T. H., read a paper on "Allergy in Otolaryngology." This paper was discussed by Drs. Kenneth L. Craft, Indianapolis, Eugene L. Derlacki, Chicago, Ray M. Moore, San Bernardino, Calif., Charles W. Brown, San Diego, Calif., and Hugh A. Kuhn, Hammond, Ind.

Drs. Philip A. Weisman, Dayton, Ohio, and Frederick A. Figi, Rochester, Minn., presented a paper on "Cancer and Chemodectoma of the Middle Ear and Mastoid." This paper was discussed by Dr. Howard P. House, Los Angeles.

SECTION ON MILITARY MEDICINE

Wednesday, June 23—Morning

The meeting was called to order at 9 o'clock by the chairman, Major Gen. Harry G. Armstrong, Washington, D. C.

Major Gen. Harry G. Armstrong, Washington, D. C., read his Chairman's Address, entitled "Military Medicine Today."

Lieut. Col. Curtis P. Artz, Fort Sam Houston, Texas, read a paper by himself and Dr. John M. Howard, Houston, Texas, on "Initial Care of the Severely Wounded." This paper was discussed by Dr. Carleton Mathewson Jr., San Francisco, and Capt. Eugene R. Hering Jr., Camp LeJeune, N. C.

Drs. Charles A. Hufnagel, Washington, D. C., and Robert B. Brown, Bethesda, Md., presented a paper on "Arterial Grafting in Military Surgery," which was discussed by Dr. Frank L. A. Gerbode, San Francisco, and Lieut. Col. Carl Hughes, Washington, D. C.

Capt. E. B. Coyl and Drs. G. W. Hyatt and R. G. Kindred, Bethesda, Md., presented a paper on "The Tissue Bank and Military Medicine." This paper was discussed by Col. Donald S. Wenger, Washington, D. C., and Dr. G. W. Hyatt, Bethesda, Md.

Col. Victor A. Byrnes, Randolph Field, Texas, read a paper on "Chorioretinal Burns Produced by Atomic Flash" by himself and Drs. David V. L. Brown, Heinrich W. Rose, and Paul A. Cibis, Randolph Field, Texas. This paper was discussed by Dr. Frederick C. Cordes, San Francisco, and Major William C. Owens, Washington, D. C.

Dr. Stanley W. Olson, Houston, Texas, read a paper on "Medical Education for National Defense (The MEND Program)," which was discussed by Drs. I. S. Ravdin, Philadelphia, and Joseph C. Hinsey, New York.

Dr. Frank B. Berry, Washington, D. C., read a paper on "Current Problems in Military Medicine." This paper was discussed by Col. Warren W. Roe Jr., Washington, D. C.

Commander John L. Enyart, Newport, R. I., read a paper on "The Bennington Disaster."

Thursday, June 24—Morning

The following officers were elected: chairman, Dr. I. S. Ravdin, Philadelphia; vice chairman, Rear Adm. H. Lamont Pugh, Washington, D. C.; secretary, Col. Charles L. Leedham, Washington, D. C.; delegate, Dr. Russel V. Lee, Palo Alto, Calif.; alternate delegate, Dr. Wendell G. Scott, St. Louis; representative to Scientific Exhibit, Col. Allen D. Smith, Washington, D. C.

Lieut. Col. Vincent M. Downey, Randolph Air Force Base, Texas, read a paper on "Clinical Evaluation of a Rapid Test for Selecting Proper Antibiotic Treatment," by himself and Drs. William E. Dye and Roland B. Mitchell, Randolph Air Force Base, Texas, and David F. Hersey, San Antonio, Texas. This paper was discussed by Col. Edwin J. Pulaski, Washington, D. C., and Dr. Richard A. Kern, Philadelphia.

Capt. Ashton Graybiel, Pensacola, Fla., read a paper on "The Intermediate Coronary Syndrome," which was discussed by Dr. George C. Griffith, Pasadena, Calif., and Lieut. Col. Byron E. Pollock, San Francisco.

Col. Thomas W. Mattingly, Washington, D. C., and Drs. Paul S. Fancher, San Francisco, Frank L. Bauer, Washington, D. C., and George P. Robb, New York, presented a paper on "The Value of the Double Standard Two-Step Exercise Tolerance Test in Detecting Coronary Disease: A Follow-Up Study of 1,000 Military Personnel." This paper was discussed by Col. Marshall E. Groover Jr., Washington, D. C., and Dr. Arthur M. Master, New York.

Brig. Gen. Otis O. Benson Jr., Washington, D. C. read a paper on "Human Tolerance in Relation to Destructive Force," which was discussed by Capt. Charles F. Gell, Johnsville, Pa., and Dr. Clayton S. White, Albuquerque, N. Mex.

Major Clarence L. Anderson, and Dr. Sidney Esensten, San Francisco; Drs. Alexander M. Boysen and Gene M. Lam, Fort Sam Houston, Texas; and Dr. William R. Shadish, Washington, D. C. presented a paper on "Medical Experiences in Communist POW Camps in Korea."

Dr. Louis H. Bauer, New York, read a paper on "Military Medicine, Civilian Medicine, and the American Medical Association."

Commander J. R. Miller, Newport, R. I., read a paper on "The Bennington Disaster."

FRIDAY, JUNE 25—MORNING

A joint meeting was held with the Section on Anesthesiology and the Section on General Practice. The proceedings are reported in the minutes of the Section on General Practice.

SECTION ON MISCELLANEOUS TOPICS

Session on Allergy

WEDNESDAY, JUNE 23—MORNING

The meeting was called to order at 9:15 o'clock by the co-chairman, Dr. Ben Z. Rappaport, Chicago.

A paper entitled "Food Allergy: Its Control Especially with Elimination Diets" was presented by Drs. Albert H. Rowe and Albert P. Rowe Jr., Oakland, Calif. This paper was discussed by Drs. Clarence Bernstein, Orlando, Fla., A. F. R. Andresen, Brooklyn, N. Y., and Milton Millman, San Diego, Calif.

Dr. Ethan Allan Brown, Boston, read a paper on "Drug Sensitivity."

Dr. M. Murray Peshkin, New York, read a paper on "Pitfalls of the Skin Tests in Allergy," which was discussed by Drs. Frank Perlman, Portland, Ore., and George Piness, Los Angeles.

A paper entitled, "The Treatment of Asthma," was presented by Drs. Clarence Bernstein and S. D. Klotz, Orlando, Fla.

Dr. Bram Rose, Montreal, Canada, read a paper on "The Therapeutic Use of Corticotropin and Cortisone in Allergy."

Dr. Frank Perlman, Portland, Ore., read a paper on "Drugs in Treatment of Asthma: Their Uses and Limitations." The last three papers were discussed by Drs. John Newland, Santa Ana, Calif., and Sam Feinberg, Chicago, and closing remarks were made by Drs. Bernstein, Rose, and Perlman.

Session on Legal Medicine

THURSDAY, JUNE 24—MORNING

The meeting was called to order at 9:10 o'clock by the chairman, Dr. Alan R. Moritz, Cleveland.

Mr. W. I. Gilbert Jr., Los Angeles, read a paper on "Advice to the Medical Witness," which was discussed by Drs. Romeo J. La Joie, Los Angeles, and E. R. Bailey, Pasadena, Calif.

Dr. Louis J. Regan, Los Angeles, read a paper on "Malpractice: An Occupational Hazard." This paper was discussed by Drs. Bernard L. Diamond and J. H. Klinger, San Francisco, Joseph Sadusa, Oakland, Calif., and W. M. Nebeker, Salt Lake City.

A paper entitled "Medicolegal Problems Related to Sterilization, Artificial Insemination, and Abortion" was presented by Messrs. J. W. Holloway Jr., and Edwin J. Holman, Chicago, and was discussed by Dr. Alexander S. Wiener, Brooklyn.

Dr. Alexander S. Wiener, Brooklyn, read a paper on "Prevention of Transfusion Accidents," which was discussed by Drs. J. E. Andes, Needles, Calif., and Leo Lowbeer, Tulsa. Okla.

Mr. George E. Hall, Chicago, read a paper on "Legal Aspects of Medical Partnerships." This paper was discussed by Drs. Richard G. Kloss, Paradise, Calif., and J. H. Klinger, San Francisco.

Dr. Alan R. Moritz, Cleveland, read the Chairman's Address, entitled "Trauma, Stress, and Coronary Thrombosis." This paper was discussed by Drs. Romeo J. La Joie, Los Angeles, Leo Lowbeer, Tulsa, Okla., Gale Wilson, Seattle, W. H. Wiermocker, Chicago, and J. H. Klinger, San Francisco.

SECTION ON NERVOUS AND MENTAL DISEASES

WEDNESDAY, JUNE 23—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. A. Earl Walker, Baltimore.

A paper entitled "Ergotamine Tolerance in Patients with Migraine," by Drs. Arnold P. Friedman, Theodore J. C. von Storch, and Percy M. Brazil, New York, was read by Dr. Brazil, and was discussed by Dr. Robert B. Aird, San Francisco.

Dr. Frederic T. Zimmerman, New York, read a paper entitled "A Serial Evaluation of New and Standard Drugs on Identical Cases with Alternate Placebo Baselines." This paper was discussed by Drs. Elinor R. Ives and George N. Thompson, Los Angeles.

A paper entitled "Observations on the Clinical and Brain-Wave Patterns of Professional Boxers," by Drs. Harry A. Kaplan and E. Jefferson Browder, Brooklyn, was read by Dr. Kaplan, and was discussed by Drs. Knox H. Finley, San Francisco, Francis M. Forster, Washington, D. C., Victor E. Gonda, Palo Alto, Calif., Frederic T. Zimmerman, New York, George N. Thompson, Los Angeles, and A. Earl Walker, Baltimore.

Dr. Henry A. Shenkin, Philadelphia, presented his paper entitled "Nonsurgical Treatment of Herniations of the Cervical Intervertebral Disc." This paper was discussed by Drs. Charles Rupp, Philadelphia, Maurice L. Silver, Providence, R. I., and A. Earl Walker, Baltimore.

A paper entitled "Evaluation of Carbon-Dioxide Inhalation for Acute Focal Cerebral Infarcts," by Drs. Clark H. Millikan and Lucian A. Smith, Rochester, Minn., was read by Dr. Millikan, and was discussed by Drs. John E. Adams, San Francisco, Henry A. Shenkin, Philadelphia, and A. Earl Walker, Baltimore.

Dr. Richard M. Brickner, New York, presented his paper entitled "A Procedure for Relieving New Phenomena in Multiple Sclerosis." This paper was discussed by Drs. Walter F. Schaller, San Francisco, Augustus S. Rose, Los Angeles, and A. Earl Walker, Baltimore.

THURSDAY, JUNE 24—MORNING

The following officers were elected: chairman, Dr. Francis J. Braceland, Hartford, Conn.; vice chairman, Dr. Joseph P. Evans, Cincinnati; secretary, Dr. Karl O. Von Hagen, Los Angeles; representative to American Board of Psychiatry and Neurology, Dr. Russell N. DeJong, Ann Arbor, Mich.; representative to Scientific Exhibit, Dr. G. Wilse Robinson, Kansas City, Mo.

The Chairman announced that, in the absence of Dr. Hans H. Reese, section delegate, his report would be submitted in writing at the conclusion of the sessions of the House of Delegates.

The Secretary read the report from the section's representative to the American Board of Neurology and Psychiatry, Dr. George Raines, followed by a report from the representative to the American Board of Neurological Surgery, Dr. Harry Wilkins, and his successor, Dr. Edgar Fincher.

The Secretary then read a letter from the Secretary of the American Board of Psychiatry and Neurology, proposing that, for the process of election which is provided for in its Bylaws, it be asked to consider only nominees from the constituent societies who are certified as specialists by the Board. On motion regularly made and seconded, it was voted unanimously to approve the proposal.

Dr. G. Wilse Robinson reported as representative to the Scientific Exhibit, and announced that section awards had been made to two members—the Certificate of Merit to Drs. William H. Sweet and Gordon L. Brownell, Boston, for their exhibit on "Localization of Intracranial Lesions with Positron-Emitting Arsenic: Clinical Results," and Honorable Mention to Drs. Mark D. Altschule and Willis Bower, Waverley, Mass., and Leonard Cook, Philadelphia, for their exhibit on "Psychiatric Experience with a New Agent, Chlorpromazine."

Dr. Francis M. Forster, Washington, D. C., made a progress report on the work sponsored by the American League of Epilepsy in conducting a survey of the legal and medical aspects regarding the divergence, in various states, of laws covering marriage, divorce, compensation, and the issuance of drivers' licenses to epileptics. On motion regularly made and seconded, it was voted unanimously that the Chairman appoint a representative to the committee working on this problem.

Dr. Leo J. Bartemeier, Detroit, reported on the activities of the American Medical Association Committee on Mental Health.

Dr. A. Earl Walker, Baltimore, presented his Chairman's Address.

Dr. Maurice L. Silver, Providence, R. I., presented his paper entitled "Hereditary Vascular Tumors of the Nervous System." This paper was discussed by Drs. John D. French, Long Beach, Calif., and Frank M. Anderson, Los Angeles.

A paper entitled "Recent Advances in the Management of Pituitary Tumors," by Drs. E. S. Gurdjian and J. E. Webster, Detroit; F. R. Latimer, Highland Park, Mich.; and S. P. Klein and J. E. Lofstrom, Detroit, was read by Dr. Gurdjian, and was discussed by Drs. Edwin B. Boldrey, San Francisco, and Abe Hauser, Houston, Texas.

Dr. John E. Raaf, Portland, Ore., presented his paper entitled "The Present Status of Surgery for Cervical Rib and Scalenus Anticus Syndrome." This paper was discussed by Drs. O. W. Jones Jr., San Francisco, and Abe Hauser, Houston, Texas.

Dr. Ralph B. Cloward, Honolulu, T. H., presented his paper entitled "Spondylolisthesis: Mechanism of Pain and Surgical Treatment," which was discussed by Drs. R. B. Raney, Los Angeles, and H. A. Brown, San Francisco.

A paper entitled "Localization of Intracranial Lesions with Positron-Emitting Arsenic: Clinical Results," by Drs. William H. Sweet and Gordon L. Brownell, Boston, was read by Dr. Sweet, and was discussed by Drs. Edwin W. Amyes, Lynwood, Calif., and Gordon L. Brownell, Boston, and Miss Helen Johnson, San Francisco.

FRIDAY, JUNE 25—MORNING

Joint Meeting with Section on Pediatrics

A paper entitled "Juvenile Delinquency: The Status of the Problem," by Drs. Leona Baumgartner, New York, and Bertram M. Beck, Washington, D. C., was read by the secretary of the Section on Pediatrics, Dr. Wyman C. C. Cole, Detroit. This paper was discussed by Dr. George H. Schade, San Francisco.

Dr. Harry Bakwin, New York, presented his paper entitled "The Causes of Juvenile Delinquency," which was discussed by Drs. Edward B. Shaw, San Francisco, Herbert R. Rabb, Belleville, Mich., and J. Auslander, New York.

Dr. Charles Bradley, Portland, Ore., presented his paper entitled "Mental Retardation and Delinquency." This paper was discussed by Dr. Leonard H. Taboroff, Salt Lake City.

Dr. Adelaide M. Johnson, Rochester, Minn., presented her paper entitled "Etiology of Delinquency and Psychopathic Behavior," which was discussed by Drs. S. A. Szurek, San Francisco, and Forrest N. Anderson, Van Nuys, Calif.

Dr. J. Cotter Hirschberg, Topeka, Kan., presented his paper entitled "The Role of Dependency and Aggression in Juvenile Delinquency." This paper was discussed by Drs. Norman Reider and Maurice Kaplan, San Francisco.

Dr. Frank J. Curran, Charlottesville, Va., presented his paper entitled "Specialized Techniques in the Treatment of Juvenile Delinquency." This paper was discussed by Drs. Karl M. Bowman, San Francisco, and Leo H. Bartemeier, Detroit.

SECTION ON OBSTETRICS AND GYNECOLOGY

TUESDAY, JUNE 22—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Bernard J. Hanley, Los Angeles.

A Symposium on Perinatal Mortality was conducted by Dr. Herbert F. Traut, San Francisco, moderator.

Dr. Edith L. Potter, Chicago, read a paper on "Changing Trends in Perinatal Mortality."

Dr. Willis E. Brown, Little Rock, Ark., read a paper on "Management of Medical and Surgical Complications of Pregnancy in Relation to Perinatal Mortality."

Dr. Howard C. Stearns, Portland, Ore., read a paper on "Management of Obstetrical Complications of Pregnancy in Relation to Perinatal Mortality."

Dr. George E. Judd, Los Angeles, read a paper on "Management of Labor in Reference to Prevention of Prenatal Mortality."

Dr. E. Stewart Taylor, Denver, read a paper on "The Role of Analgesia and Anesthesia in Perinatal Mortality."

Written questions from the floor were discussed by the authors of the papers.

WEDNESDAY, JUNE 23—AFTERNOON

The following officers were elected: chairman, Dr. Frederick H. Falls, Oak Park, Ill.; vice chairman, Dr. Frank R. Lock, Winston-Salem, N. C.; secretary, Dr. D. Frank Kaltreider, Baltimore.

Dr. Bernard J. Hanley, Los Angeles, read his Chairman's Address.

Dr. Giorgio Hecht-Lucari, Rome, Italy, read a paper on "Pharmacological Basis of Combined Estrogen-Androgen Therapy in Gynecology."

Dr. Douglas M. Haynes, Dallas, Texas, read a paper on "Occipitoposterior Positions of the Vertex."

Dr. Carl Henry Davis, Miami, Fla., read a paper on "Trichomonas Vaginalis Infections: Diagnosis and Data on Treatment with Carlendacide."

Dr. Goodrich C. Schauffler, Portland, Ore., read a paper on "Maternity Minus Marriage."

Dr. Nadina R. Kavinoky, Los Angeles, read a paper on "The Premarital Medical Examination."

Drs. Keith P. Russell, James M. Maharry, and John W. Stehly, Los Angeles, presented a paper on "Acute Renal Failure as an Obstetric Complication."

THURSDAY, JUNE 23—AFTERNOON

A Symposium on the Disturbances of Menstruation was conducted by Dr. C. Frederic Fluhmann, San Francisco, moderator.

Dr. Charles E. McLennan, San Francisco, read a paper on "The Physiology of Menstruation."

Dr. Russell R. de Alvarez, Seattle, read a paper on "Amenorrhea."

Dr. Erle Henriksen, Los Angeles, read a paper on "Dysmenorrhea."

Dr. Emil G. Holmstrom, Salt Lake City, read a paper on "Functional Bleeding."

Dr. Emil Novak Jr., Baltimore, read a paper on "The Menopause" by Dr. Emil Novak, Baltimore.

Written questions from the floor were discussed by the authors of the papers.

SECTION ON OPHTHALMOLOGY

TUESDAY, JUNE 22—AFTERNOON

The meeting was called to order at 2:15 o'clock by the chairman, Dr. Trygve Gundersen, Boston.

Dr. Trygve Gundersen, Boston, read his Chairman's Address on "Glaucoma and Amblyopia Ex Anopsia: Two Preventable Forms of Blindness in America."

Dr. Arthur J. Bedell, Albany, N. Y., read a paper on "Choroidopathy."

Dr. Donald J. Lyle, Cincinnati, read a paper on "Divergence Insufficiency," which was discussed by Dr. Francis H. Adler, Philadelphia.

A paper on "Ocular Penetration of Procaine Following Subconjunctival Injection," by Drs. Henry E. Schlegel Jr. and Kenneth C. Swan, Portland, Ore., was read by Dr. Schlegel, and was discussed by Dr. A. Edward Maumenee Jr., San Francisco.

A paper on "The Electroretinogram in Nyctalopia," by Drs. John C. Armington and Gerald J. Schwab, Washington, D. C., was read by Dr. Schwab. This paper was discussed by Drs. Paul W. Miles, St. Louis, and Erwin Marg, Oakland, Calif.

Dr. William C. Frayer, Philadelphia, read a paper on "Elevated Lesions of the Macular Area," which was discussed by Drs. Levon K. Garron, Oakland, Calif., and Arthur J. Bedell, Albany, N. Y.

A paper on "Further Observations on the Use of P-32 As an Aid in Diagnosis of Intraocular Neoplasms," by Drs. I. J. Eisenberg, I. S. Terner and Irving H. Leopold, Philadelphia, was read by Dr. Eisenberg, and was discussed by Drs. Edwin B. Dunphy, Boston, Jerome W. Bettman, San Francisco, William Owens, Washington, D. C., and I. J. Eisenberg, Philadelphia.

WEDNESDAY, JUNE 23—AFTERNOON

Minutes of the 1953 business session were approved as printed.

Reports of section committees were read and approved.

Drs. Clyde C. Clapp, Baltimore, Michael J. Hogan, San Francisco, and K. W. Ascher, Cincinnati, were nominated for the Committee on Award of the Knapp Medal and were duly elected.

The following committee appointments were recommended by the executive committee and approved by the section:

1. American Committee on Optics and Visual Physiology (Joint): Reappointment of Dr. William F. Hughes Jr., for three years, and appointment of Dr. Arthur Linksz for two years to fill the position left by the resignation of Dr. Lawrence T. Post; the members will then be: Dr. Gerald Fonda (term expires 1955); Dr. Arthur Linksz (term expires 1956); Dr. William F. Hughes Jr. (term expires 1957).

2. Committee on American Board of Ophthalmology: Reappointment of Dr. James H. Allen; members will then be: Dr. Michael J. Hogan (term expires 1955); Dr. Brittain F. Payne (term expires 1956); Dr. John S. McGavic (term expires 1957); Dr. James H. Allen (term expires 1958).

3. Committee on National Museum of Ophthalmic Pathology (Joint): Reappointment of Dr. Jonas S. Friedenwald.

4. Committee on Scientific Exhibit from Section on Ophthalmology: Appointment of Drs. William F. Hughes Jr., chairman, Donald J. Lyle and Walter H. Fink.

5. Committee on Museum of Ophthalmic History: Reappointment of Drs. Burton Chance, chairman, Hans Barkan, and Frederick C. Cordes.

6. Committee to National Conference on Medical Nomenclature (Joint): Reappointment of Dr. Conrad Berens.

7. Committee on American Orthoptic Council (Joint): Appointment of Dr. William C. Owens for three years; members will then be Dr. Edmond L. Cooper (term expires 1955); Dr. Hermann M. Burian (term expires 1956); Dr. William C. Owens (term expires 1957).

8. Committee on Industrial Ophthalmology (Joint): Reappointment of Dr. Albert D. Ruedemann, chairman, Hedwig S. Kuhn, and Glenn Harrison.

9. Representatives of Section to American College of Surgeons Board of Governors: The Executive Committee submitted the following names, from which one will be selected by the American College of Surgeons to serve on the Board of Governors for three years: Term 1954 to 1957—Drs. M. Hayward Post, C. Dwight Townes, Ralph O. Rychener; term 1955 to 1958—Drs. Harold F. Whalman, Peter Kronfeld, and Arthur DeVoe. The members will then be Drs. Albert D. Ruedemann (term expires 1955), James N. Greear (term expires 1956), and whomever is selected from the two groups listed above.

10. Knapp Testimonial Fund Committee (Permanent Committee): Drs. Parker Heath and Francis H. Adler.

11. Delegate to represent the Section on Ophthalmology at the XVII International Congress of Ophthalmology meeting in New York, September 1954: Appointment of Dr. Parker Heath as delegate and Dr. W. Guernsey Frey as alternate delegate.

12. Section Delegates: Reelection of Dr. William L. Benedict, with Dr. Harvey E. Thorpe, alternate.

It was voted to discontinue the Committee for the Study of Retrolental Fibroplasia, at its request.

It was voted that the section become one of the organizations which sponsor the recently organized "National Committee for Research in Eye Diseases and Disabilities," which was conceived for the purpose of directing attention to the need for larger amounts of money for research in eye diseases. Educa-

tional efforts are to be directed toward both governmental and private sources of financial support for such activities. The purpose of this organization aims to facilitate the soliciting of funds by individuals or institutions conducting research into ocular diseases but will not solicit funds for disbursal to individuals or to institutions. The appointment of Dr. Francis H. Adler to represent the section on the National Committee on Eye Diseases and Disabilities was approved.

The following officers were elected: chairman, Dr. Erling W. Hansen, Minneapolis; vice chairman, Watson Gailey, Bloomington, Ill. (Dr. Harold G. Scheie, Philadelphia, was elected at the section meeting in 1953 for a term of three years).

Dr. Arthur J. Bedell, Albany, N. Y., presented the following resolutions which were adopted unanimously:

WHEREAS, In the near future there will be an eclipse of the sun; and

WHEREAS, The eye must be protected from exposure to it; and

WHEREAS, Colored glasses are neither safe protectors nor even partial ones; therefore be it

Resolved, That we, the members of the Section on Ophthalmology, do hereby petition the press, radio, and television agencies to use their resources to advise all that they must protect their eyes while viewing the eclipse, and that parents be especially careful as to their children; and be it further

Resolved, That the public be told that an effective shield may be made by heavily smoking a piece of glass, and also that previously exposed thick x-ray film is a readily available filter.

On motion by Dr. Dohrmann K. Pischel, San Francisco, it was voted that the secretary be instructed to send greetings from the Section on Ophthalmology to the Viennese Ophthalmological Society on the occasion of its 100th anniversary.

Dr. R. R. Muschlitz, Allentown, Pa., presented the following resolutions, which were unanimously adopted:

WHEREAS, The examination of applicants for blind pension benefits by nonmedical examiners has been detrimental to the applicants; therefore be it

Resolved, By the Section on Ophthalmology of the American Medical Association that the American Medical Association shall stimulate and/or support legislation amending the federal social security laws regulating the examination for blind pension; and be it further

Resolved, That the legislation or amendment shall incorporate the following: That in order to qualify for federal grants-in-aid, the states shall require that only a registered doctor of medicine be used to examine applicants for blind pension.

Dr. Ralph Pino, Detroit, read the following statement:

I wish to call to the attention of the section the fact that we do not allow enough time at these annual meetings to attend to the essential problems of organization and of business that are necessary corollaries to the application of the science of ophthalmology.

The distribution of eye care is the very purpose of the science of eye care. The chairman's very important address at the beginning of yesterday's session gave strong emphasis to the need of techniques of expanded methods of early detection of the causes of blindness in glaucoma and amblyopia exanopsia. The distribution of good eye care is limited exactly by the number of doctors of medicine (ophthalmologists) there are in the United States to furnish the eye care except as there is furnished to the ophthalmologist and trained by the ophthalmologist enough help in his hospital, office and laboratories to get his work done, to make possible an expanded distribution of scientific eye care. The development of orthoptic technicians is a case in point, and other assisting technicians are essential in our expanding population, or great segments of eye care will be increasingly taken over by others, to the detriment of good scientific application. Some states are now being plagued by legislation bearing on ophthalmology decidedly inimical to the best interests of good ophthalmological care. The reason comes from our being uninformed and unprepared to meet the situation. Other interests aware of our distribution limitations are increasingly putting their feet in the door while we blind ourselves by our very great and essential exclusive attention to our scientific attainments without devoting adequate time and attention to methods of the distribution of our services.

In order that the American Medical Association may function to the extent of its responsibilities, it has to be informed. I am of the opinion that our good delegate to the American Medical Association from this section cannot be adequately informed to carry our message into that very important but cumbersome legislative body, the House of Delegates, without more information from the grass roots than the time given to business in the section allows for. I would suggest that a committee be formed, if one does not already exist, to analyze our problems at the grass roots level and inquire into the laws that have peen placed on the statutes of the state of New Jersey and are being attempted in other states and will be attempted in every state. I am not sure that "a little House of Delegates" to meet prior to the meeting of the section each year, and with representatives from all the states, may not be essential to our deliberations and to inform our delegate to the House of Delegates of the American Medical Association of our problems.

The Chairman declared that the executive committee would give consideration to the remarks of Dr. Pino.

Award of the Prize in Ophthalmology for 1954: Dr. Edwin B. Dunphy, Boston, stated: "Before presenting the Prize in Ophthalmology for this year, I want to say a few words about it and tell you something about the philosophy which lies behind it. The Prize in Ophthalmology differs from many other awards. It is given to a member of this section not for the best paper on the program nor for having made some world-shaking discovery, but rather for his general contributions to our science over a period of years. The recipient is chosen by the executive committee of the section, and therefore I, as the current chairman of that body, have the duty to make the presentation. This year the committee has selected Dr. Otto Barkan of St. Louis.

A paper on "Evaluation of Ocular Signs and Symptoms in Verified Brain Tumors," by Drs. James F. O'Rourke and Nathan S. Schlezinger, Philadelphia, was read by Dr. O'Rourke, and was discussed by Dr. George S. Tyner, Denver.

A paper on "Preparation, Sterilization, and Preservation of Ophthalmic Solutions: Experimental Studies and a Practical Method," by Drs. John T. Murphy, Henry F. Allen and Anita B. Mangiaracine, Boston, was read by Dr. Murphy. This paper was discussed by Drs. Daniel G. Vaughn Jr., Palo Alto, Calif., Sidney Riegelman, San Francisco, James H. Allen, New Orleans, and Henry F. Allen, Boston.

A paper on "Adult Ocular Toxoplasmosis: A Preliminary Report of a Parasitologically Proven Case," by Drs. Leon Jacobs, Bethesda, Md., and John R. Fair and John H. Bickerton Jr., Washington, D. C., was read by Dr. Jacobs, and was discussed by Drs. Helenore C. Foerster and Michael J. Hogan, San Francisco, Albert B. Sabin, Cincinnati, and Leon Jacobs, Bethesda, Md.

Dr. James E. Bennett, Brookline, Mass., read a paper on "Periodic Unilateral Exophthalmos: Report of a Case," which was discussed by Dr. Albert D. Ruedemann, Detroit.

Dr. Corley B. McFarland, South Bend, Ind., read a paper on "Heredomacular Degeneration." This paper was discussed by Dr. Harold F. Falls, Ann Arbor, Mich.

THURSDAY, JUNE 24—AFTERNOON

A paper on "Unilateral Blindness Occurring During Anesthesia for Neurosurgical Operations," by Drs. Robert W. Hollenhorst, Hendrik J. Svien, and Clair F. Benoit, Rochester, Minn., was read by Dr. Hollenhorst, and was discussed by Drs. James N. Greear Jr., Reno, Nev., and Robert W. Hollenhorst, Rochester, Minn.

A paper on "Beta Radiation Cataracts," by Drs. James E. McDonald, Oak Park, Ill., and William F. Hughes Jr. and Vincent G. Peiffer, Chicago, was read by Dr. McDonald. This paper was discussed by Drs. George M. Haik, New Orleans (discussion read by Dr. George S. Ellis, New Orleans), I. J. Eisenberg, Philadelphia, and James E. McDonald, Oak Park, Ill.

A paper on "The Surgical Management of Nonparalytic Exotropia," by Drs. Robert D. Mulberger and P. Robb McDonald, Philadelphia, was read by Dr. McDonald, and was discussed by Dr. Arthur J. Jampolsky, San Francisco.

Dr. Joseph Igersheimer, Boston, read a paper on "Visual Changes in Malignant Exophthalmos." This paper was discussed by Drs. Alson E. Braley, Iowa City, Albert D. Reudemann, Detroit, Frederick C. Cordes, San Francisco, and Joseph Igersheimer, Boston.

Dr. John S. McGavic, Bryn Mawr, Pa., read a paper on "Lymphomatous Tumors: A Clinical Follow-Up," which was discussed by Drs. A. Ray Irvine Jr., Los Angeles, and John S. McGavic, Bryn Mawr, Pa.

A paper on "Lipochondrodysplasia (Gargoylism)," by Drs. Frank W. Newell and Douglas N. Buchanan, Chicago, and Aüne Koistinen, Helsinki, Finland, was read by Dr. Newell. This paper was discussed by Drs. Frederick C. Cordes, San Francisco, and Frank W. Newell, Chicago.

SECTION ON ORTHOPEDIC SURGERY

Tuesday, June 22—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Charles N. Pease, Chicago.

Dr. Robert Mazet Jr., Los Angeles, read a paper on "Skeletal Lesions in Coccidioidomycosis," which was discussed by Drs. Lewis N. Cozen and Paul McMaster, Los Angeles.

Drs. Donald S. Miller and William F. Lichtman, Chicago, presented a paper on "Diabetic Neuropathic Arthropathy." The paper was discussed by Drs. Francis J. Cox, San Francisco, and Einar Henriksen, Seattle.

Drs. Frank E. Stinchfield, New York, and William A. Stinton, Danbury, Conn., presented a paper on "The Clinical Significance of the Transitional Lumbosacral Vertebra," which was discussed by Drs. George L. Dixon, Tuscon, Ariz., A. Gurney Kimberley, Portland, Ore., and Hugh L. White, San Francisco.

Drs. David M. Bosworth, J. W. Fielding, Manuel Guzman Acosta, and L. M. Demarest, New York, presented a paper on "The Use of Iproniazid (Marsilid) in the Treatment of Nontuberculous Bone and Joint Infection." The paper was discussed by Drs. Charles O. Bechtol, Oakland, Calif., and Ernst Dehne, San Francisco.

Drs. Richard T. Odell and J. Albert Key, St. Louis, presented a paper on "Metastatic Lesions Simulating Rupture of a Lumbar Intervertebral Disk." The paper was discussed by Drs. J. Vernon Luck, Los Angeles, and Gerald G. Gill, San Francisco.

Dr. Edward L. Compere, Chicago, read a paper on "The Prevention of Delayed Union or Nonunion in the Treatment of Fractures," which was discussed by Drs. Frank G. Murphy, Chicago, Marshall R. Urist, Los Angeles, and J. Warren White, Honolulu, T. H.

Wednesday, June 23—Afternoon

The following officers were elected: chairman, Dr. Jesse T. Nicholson, Philadelphia; vice chairman, Dr. William T. Green, Boston; secretary, Dr. Frederick R. Thompson, New York; delegate, Dr. Edward L. Compere, Chicago; alternate delegate, Dr. I. S. McReynolds, Houston, Texas; representative to Scientific Exhibit, Dr. J. Vernon Luck, Los Angeles; representatives on the American Board of Orthopedic Surgery, Drs. Mather Cleveland, New York, and Walter Graham, Santa Barbara, Calif.

Dr. H. Philip Dohn, Eureka, Calif., read a paper on "The Use of Internal Fixation in Compound Fractures of the Extremities," which was discussed by Drs. Donald E. King, San Francisco, and Lewis M. Overton, Albuquerque, N. Mex.

Dr. Charles W. Lester, New York, read a paper on "Pigeon Breast, Funnel Chest, and Other Congenital Deformities of the Anterior Chest Wall." The paper was discussed by Drs. A. Lincoln Brown, San Francisco, F. Henry Ellis Jr., Rochester, Minn., and J. Warren White, Honolulu, T. H.

Dr. Charles N. Pease, Chicago, read his Chairman's Address.

Dr. Alfonso Della Pietra, Waterbury, Conn., read his paper on "Results of Stabilizing Spine Fusion in Cases of Previous Herniated Disk Removal Without Fusion." The paper was discussed by Drs. C. A. Splithoff, Oakland, Calif., and Delbert W. Hand, San Francisco.

Drs. Robert E. Carroll and Alexander Garcia, New York, presented a paper on "Acute Calcific Deposits in the Hand," which was discussed by Drs. John H. Aldes, Los Angeles, and Foster L. Matchett, Denver.

Thursday, June 24—Afternoon

Drs. Dana M. Street, Memphis, Tenn., and Anibal L. Lugo, Santurce, Puerto Rico, presented a paper on "Dual Pinning in Supracondylar Fracture of the Femur," which was discussed by Drs. I. E. Hendryson, Denver, and Donald B. Slocum, Eugene, Ore.

Dr. J. William Littler, New York, read a paper on "Prevention and Correction of Adduction Contracture of the Thumb." The paper was discussed by Drs. Lot D. Howard Jr., San Francisco, and Robert E. Carroll, New York.

Dr. Gene D. Caldwell, Shreveport, read a paper on "Transplantation of the Biceps Femoris Tendon to the Patella by the Medial Route in Poliomyelitis Quadriceps Paralysis." The paper was discussed by Drs. Frederic C. Bost, San Francisco, and Nicholas J. Giannestras, Cincinnati..

Drs. Jesse T. Nicholson, Robert M. Foster and Robert D. Heath, Philadelphia, presented a paper on "Bryant's Traction: A Provocative Cause of Circulatory Complications," which was discussed by Drs. Edward G. Ewer, Oakland, Calif., and Robert J. Joplin, Brookline, Mass.

Drs. John R. Stacy and Earl D. McBride, Oklahoma City, presented a paper on "Interbody Spinal Fusion: Preliminary Report." The paper was discussed by Drs. H. Relton McCarroll, St. Louis, and Douglas D. Toffelmier, Oakland, Calif.

Drs. George Hammond, Howard R. Crawford and G. Edmund Haggart, Boston, presented a paper on "Vitallium Mold Arthroplasty of the Hip: An End Result Study," which was discussed by Drs. H. E. Emmel, Seattle, and Keene O. Haldeman, San Francisco.

SECTION ON PATHOLOGY AND PHYSIOLOGY

Tuesday, June 22—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. J. Earl Thomas, Philadelphia.

Dr. Hans Popper, Chicago, presented a paper on "Nutritional Hepatic Injury," which was discussed by Drs. Robert M. Kark, Chicago, and Victor M. Sborov, San Francisco.

Drs. Morris E. Dailey and Stuart Lindsay, San Francisco, presented a paper on "Relation of Thyroid Neoplasms to Hashimoto Thyroiditis." This paper was discussed by Drs. Alvin J. Cox Jr., San Francisco, and Leo Lowbeer, Tulsa, Okla.

Drs. Frank B. Queen and Hoyo Ko Migaki, Portland, Ore., presented a paper on "Thyroid Nodules and Thyroid Cancers in 1,000 Consecutive Necropsies," which was discussed by Dr. John B. Hazard, Cleveland.

Drs. Bruno J. Peters, Milwaukee, and Joseph M. Lubitz, and Margaret M. Kaser, Wood, Wis., presented a paper on "Vitamin A Absorption in the Diagnosis of Chronic Pancreatitis." This paper was discussed by Drs. Mandred W. Comfort, Rochester, Minn., Edwin F. Hirsch, Chicago, and Joseph M. Lubitz, Wood, Wis.

Dr. Lawrence J. McCormack, Cleveland, presented a paper on "Neurogenic Tumors (Olfactory Neuroepithelioma) of the Nasal Fossa," which was discussed by Drs. J. W. Kernohan, Rochester, Minn., and Shields Warren, Boston.

Drs. Weldon K. Bullock, San Gabriel, Calif., and Richard E. Houts and John J. Gilrane, Los Angeles, presented a paper on "Survey of Ovarian Tumors from 1944 Through 1953 in a Large General Hospital." This paper was discussed by Drs. Edward Gomer Jones Jr., and Hugh A. Edmondson, Los Angeles.

Drs. Charles Pokorny and C. A. Hellwig, Halstead, Kan., presented a paper on "Diffuse Interstitial Fibrosis of the Lungs: Review of the Literature and Report of One Case," which was discussed by Drs. C. A. Hellwig, Halstead, Kan., and Edwin F. Hirsch, Chicago.

Wednesday, June 23—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. J. Earl Thomas, Philadelphia.

The following officers were elected: chairman, Dr. S. A. Levinson, Chicago; vice chairman, Dr. Roger D. Baker, Durham, N. C.; secretary, Dr. Edwin F. Hirsch, Chicago; representative to Scientific Exhibit, Dr. Frank B. Queen, Portland, Ore.; delegate, Dr. L. G. Montgomery to continue unexpired term of two years; alternate, Dr. H. J. Corper to continue unexpired term of two years.

The scientific exhibit on Fresh Pathology was discussed by Dr. Frank B. Queen, Portland, Ore.

The scientific exhibit on Systemic Mycosis in Animals was discussed by Dr. J. R. Prine, Washington, D. C.

The scientific exhibit on Lifetime Cigaret Smoke Exposure in a Colony of C57 Black Mice was discussed by Dr. Russell W. Weller, Philadelphia.

The scientific exhibit on Fungous Diseases was discussed by Dr. Emma S. Moss, Baton Rouge, La. Dr. Robert S. Cook made remarks from the floor.

The scientific exhibit on Glucagon: The Hyperglycemic Hormone of the Pancreas was discussed by Dr. Giorgio Galasino, Chicago.

The scientific exhibit on Cardiac Excitability and Ventricular Fibrillation was discussed by Dr. Brian F. Hoffman, Brooklyn.

The scientific exhibit on Colloidophagy and Chronic Thyroiditis was discussed by Dr. C. A. Hellwig, Halstead, Kan.

The scientific exhibit on Certification of Medical Technologists was discussed by Dr. Ruth Drummond, Muncie, Ind.

The scientific exhibit Neoplasms of the Thyroid was discussed by Dr. W. A. Hawk, Cleveland.

The scientific exhibit Intracranial Metastasis from Carcinoma of the Lung was discussed by Dr. Bela Halpert, Houston, Texas.

Dr. J. Earl Thomas, Philadelphia, read his Chairman's Address on "The Autonomic Nervous System in Gastrointestinal Disease." This paper was discussed by Dr. Fred D. Heegler, San Francisco.

Drs. Edwin E. Osgood, Robert D. Koler, and Margaret E. Hughes, Portland, Ore., presented a paper on "Differential Diagnosis and Treatment of the Hemorrhagic Diseases," which was discussed by Dr. Byron E. Hall, San Francisco.

Dr. John H. Carlquist, Salt Lake City, read a paper on "Echinococcus Disease: Report of Five Cases Contracted in Intermountain States."

Dr. Perry J. Melnick, Los Angeles, read a paper on "Polycystic Liver: Analysis of 70 Cases." This paper was discussed by Dr. Hugh A. Edmondson, Los Angeles.

Dr. V. E. Martens, Bethesda, Md., read a paper on "Unusual Synovioma," which was discussed by Drs. Charles F. Geschickter and Richard Shuman, Washington, D. C.

Dr. Lorenz E. Zimmerman, Washington, D. C., read a paper on "The Demonstration of Histoplasma and Coccidioides in So-Called Tuberculomas of the Lung: A Preliminary Report on 35 Cases." This paper was discussed by Drs. Roger D. Baker, Durham, N. C., and Thomas F. Puckett, Denver.

Drs. Robert F. Rushmer, Dean K. Crystal, Clyde L. Wagner, Allan W. Lobb, Bliss L. Finlayson, Richard M. Ellis, and Alden A. Nash, Seattle, presented a paper on "'Applications of Cinefluorography and Stereo-Cinefluorography." This paper was discussed by Drs. David A. Rytand, San Francisco, and Hans H. Hecht, Salt Lake City.

Thursday, June 24—Afternoon

A joint meeting was held with the Section on Gastroenterology and Proctology. The proceedings are reported in the minutes of that section.

SECTION ON PEDIATRICS

Thursday, June 24—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Oliver L. Stringfield, Stamford, Conn.

The following officers were elected: chairman, Dr. William Weston Jr., Columbia, S. C.; vice chairman, Dr. Thurman B. Givan, Brooklyn; secretary, Dr. Wyman C. C. Cole, Detroit; delegate, Dr. Woodruff L. Crawford, Rockford, Ill.; representative to Scientific Exhibit, Dr. F. Thomas Mitchell, Memphis, Tenn.; custodian of Abraham Jacobi Fund, Dr. Hugh L. Dwyer, Kansas City, Mo.

Dr. Oliver L. Stringfield, Stamford, Conn., read his Chairman's Address.

Dr. Harold Jacobziner, New York, read his paper on "Home Safety and Accident Prevention," which was discussed by Drs. George M. Wheatley, New York, and Harry F. Dietrich, Beverly Hills, Calif.

Drs. William H. Snyder Jr. and G. Lawrence Chaffin, Hollywood, Calif., presented a paper on "The Surgical Management of Undescended Testicles." The paper was discussed by Drs. Grover C. Penberthy, Detroit, William C. Deamer, San Francisco, and Fred A. Simons, Boston.

Dr. Morton Zall, Los Angeles, read a paper on "Basic Allergy for the Pediatrician," which was discussed by Drs. Norman W. Clein, Seattle, A. Crawford Bost, San Francisco, and J. H. Davis, Palo Alto, Calif.

Drs. Joseph Palma, G. M. Ewing and H. M. Sexton, Honolulu, T. H., presented a paper on "Erythema Multiforme: A Febrile Syndrome." The paper was discussed by Drs. Kermit J. Ryan, Hollywood, Calif., J. A. Anderson, San Francisco, and John S. Kruglich, Phoenix, Ariz.

Dr. Forrest H. Adams, Los Angeles, read a paper on "New Concepts in the Diagnosis and Treatment of Rheumatic Fever," which was discussed by Drs. John A. Anderson and Mary B. Olney, San Francisco.

Dr. Robert A. Tidwell, Seattle, read a paper on "The Single Approach to Streptococcic Prophylaxis." The paper was discussed by Drs. C. Henry Kempe, San Francisco, Gene H. Stollerman, Irvington-on-Hudson, N. Y., and William M. M. Kirby, Seattle.

Friday, June 25—Morning

A joint meeting was held with the Section on Nervous and Mental Diseases. The proceedings are reported in the minutes of that section.

SECTION ON PHYSICAL MEDICINE AND REHABILITATION

Tuesday, June 22—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Walter M. Solomon, Cleveland.

Dr. Walter M. Solomon, Cleveland, read his Chairman's Address entitled "Factors Influencing Progress in Physical Medicine and Rehabilitation."

Drs. Murray B. Ferderber, Pittsburgh, and Gerard P. Hammill, Woodville, Pa., presented a paper on "An Effective Comprehensive Program for Geriatric Patients."

Dr. William Bierman, New York, read a paper on "Therapeutic Use of Cold."

Dr. Donald A. Covalt, New York, read a paper on "Practical Mechanical Devices Used by Disabled in Activities of Daily Living."

Drs. Frank H. Krusen, Justus F. Lehmann, Donald J. Erickson, and Gordon M. Martin, Rochester, Minn., presented a paper on "The Present Value of Ultrasonic Diathermy." This paper was discussed by Dr. Frank Steffen Zach, Vienna, Austria.

Dr. Ralph E. DeForest, Chicago, read a paper on "Council on Physical Medicine and Rehabilitation: Services for the Practitioner."

Dr. S. Malvern Dorinson, San Francisco, read a paper on "Breathing Exercises as an Adjunct in the Treatment of Bronchial Asthma and Pulmonary Emphysema."

Dr. Ralph E. Worden, Columbus, Ohio, read a paper on "Rehabilitation Centers: Planning, Administration, Personnel, Finances," which was discussed by Dr. Arthur C. Jones, Portland, Ore.

Dr. Everill W. Fowlks, Oswego, Ore., read a paper on "Plexiglass Splints for Neurological Conditions."

Drs. Miland E. Knapp and J. P. Engel, Minneapolis, read a paper on "The Importance of Scapulohumeral Motion in Shoulder Lesions."

WEDNESDAY, JUNE 23—AFTERNOON

The following officers were elected: chairman, Dr. William H. Schmidt, Philadelphia; vice chairman, Dr. Frances Baker, San Mateo, Calif.; secretary, Dr. Walter J. Zeiter, Cleveland; delegate, Dr. Frank H. Krusen, Rochester, Minn.; alternate delegate, Dr. Arthur L. Watkins, Boston; representative to Scientific Exhibit, Dr. Donald A. Covalt, New York.

A panel discussion on "Degenerative Joint Disease: Osteoarthritis," was conducted by Dr. Arthur C. Jones, Portland, Ore., moderator, with the following participants and contributions:

Dr. Edward W. Lowman, New York, read a paper on "General Remarks: Incidence, Importance, Etiology, Pathology, Symptoms, and Signs";

Dr. Howard F. Polley, Rochester, Minn., read a paper on "Medical Treatment of Osteoarthritis";

Dr. Frances Baker, San Mateo, Calif., read a paper on "Physical Medicine Rehabilitation Treatment";

Dr. John J. Loutzenheiser, San Francisco, read a paper on "Surgery."

THURSDAY, JUNE 24—AFTERNOON

Dr. Frederic J. Kottke, Minneapolis, read a paper, "Backache: Measures That Have Proved Helpful," which was discussed by Dr. W. P. Forcade, San Francisco.

Dr. O. L. Huddleston, Santa Monica, Calif., read a paper, "Basic Principles of Neuromuscular Reeducation." This paper was discussed by Dr. William B. Snow, New York.

Drs. Raoul C. Psaki Jr., Phyllis R. Strobel, and John J. Keys, San Francisco, presented a paper, "The Lower Extremity Amputee: Postoperative Management," which was discussed by Dr. Odon F. von Werssowetz, Gonzales, Texas.

Drs. Morton Marks and Joseph Goodgold, New York, presented a paper, "Physical Medicine Aid in the Care of Multiple Sclerosis." This paper was discussed by Dr. Francis X. Sweeney, Detroit.

Dr. Fred B. Moor, Los Angeles, presented a paper, "The Use of Physical Measures in the Diagnosis and Treatment of Facial Paralysis," which was discussed by Dr. Sherburne W. Heath Jr., Bellevue, Wash.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

TUESDAY, JUNE 22—AFTERNOON

The meeting was called to order at 2:05 p. m. by the chairman, Dr. Jean S. Felton, Oklahoma City.

Dr. Morris S. Schulzinger, Cincinnati, read a paper on "The Accident Syndrome: A Clinical Approach."

A business meeting was held at which the following resolutions were presented by Dr. Rutherford T. Johnstone, Los Angeles.

WHEREAS, Proprietors of small industrial and commercial establishments are becoming acquainted with the values of industrial health services now regarded as good business practice in many larger corporations; and

WHEREAS, Local chambers of commerce, trade associations, and similar groups will need advice and assistance from county medical societies about desirable methods of organizing such services, especially for groups of small concerns joining forces for this purpose; and

WHEREAS, The Council on Industrial Health has recently promulgated "Guiding Principles of Occupational Medicine," which define professional and ethical relationships between physicians in industry and employers, workers and professional colleagues; and

WHEREAS, Agreeable working relationships have already been developed between chambers of commerce or similar organizations and official medical societies bearing on this general field; and

WHEREAS, Industrial health services based both on preventive medicine and on sound programs of medical care of occupational injury and illness, conducted in accordance with ethical professional standards are the most effective approach to better health for our working population; be it therefore

Resolved, That the Council on Industrial Health be instructed to refer its "Guiding Principles of Occupational Medicine" to state and local county medical societies for endorsement as acceptable criteria under which industrial health services can properly develop; and be it further

Resolved, That the Council on Industrial Health prepare and publish reports on group development of small plant industrial health services for the further guidance and attention of this House and of the state and county medical societies.

Dr. William P. Shepard, New York, moved approval of the resolution, for presentation to the House of Delegates. The motion was seconded by Dr. D. John Lauer, Pittsburgh, was put to a vote and carried.

Dr. Harry F. Dietrich, Beverly Hills, Calif., read a paper entitled, "Childhood Accident Prevention: What are We Waiting For?" This paper was discussed by Drs. W. F. Ashe, Columbus, Ohio, Aaron Leven and Rose Alexander Bowers, Los Angeles, and J. H. Klinger, San Francisco.

Dr. E. P. Luongo, Los Angeles, read a paper on "Evaluation of Periodic Examinations of Employees," which was discussed by Drs. Max Teitler, Oakland, Calif., and Rodney R. Beard, San Francisco.

Dr. H. S. Van Ordstrand, Cleveland, read a paper on "Berylliosis: A Real But Preventable Industrial Disease." This paper was discussed by Drs. Harry Foreman, Los Alamos, N. Mex., and O. A. Sander, Milwaukee.

Dr. D. John Lauer, Pittsburgh, read a paper on "Clinical Lead Intoxication."

Dr. Elston L. Belknap, Milwaukee, read a paper on "Treatment of Inorganic Lead Intoxication with EDTA."

Dr. Karl V. Kitzmiller, Cincinnati, read a paper on "Treatment of Organic Lead Intoxication with EDTA."

Dr. Harry Foreman, Los Alamos, N. Mex., read a paper on "Experimental Administration of EDTA in Plutonium Poisoning."

The last four papers were discussed by Drs. Robert A. Kehoe, Cincinnati, Robert Bell, Denver, and Charles Hines, San Francisco.

WEDNESDAY, JUNE 23—AFTERNOON

The following officers were elected: chairman, Dr. John J. Phair, Cincinnati; vice chairman, Dr. Edward P. Luongo, Los Angeles; delegate, Dr. Rutherford T. Johnstone, Los Angeles; alternate delegate, Dr. O. A. Sander, Milwaukee; representative to Scientific Exhibit, Dr. Paul A. Davis, Akron, Ohio. The term of the secretary, Dr. Frank Princi, Cincinnati, was unexpired.

Dr. Paul Kotin, Los Angeles, read a paper on "Laboratory Methods in the Medical Investigation of Air Pollution."

Dr. Ian MacDonald, Los Angeles, read a paper on "Environmental Factors of Occupational Origin Related to Carcinogenesis."

Drs. Fred Bryan and Albert Bellamy, Los Angeles, presented a paper on "Air Pollution as Studied by Tracer Techniques."

Dr. Jacob Cholak, Cincinnati, read a paper on "Air Pollution Measurement."

These four papers were discussed by Drs. Elmer C. Rigby, Los Angeles, Frank Stead, San Francisco, Jacob Cholak, Cincinnati, and Paul Kotin, Los Angeles.

Col. John E. Boysen, Wright-Patterson Air Force Base, Ohio, read a paper on "Aviation Medicine at the Crossroads."

Major Horace O. Parrack, Wright-Patterson Air Force Base, Ohio, read a paper on "Protection from Aircraft Noise," which was discussed by Dr. A. C. Einert, Berkeley, Calif., and Mr. Robert F. Sheldon, Sacramento, Calif.

Dr. Julius Kaunitz, New York, read a paper on "Ergot as the Cause of Thromboangiitis Obliterans (Buerger's Disease)."

THURSDAY, JUNE 24—AFTERNOON

Dr. Jean S. Felton, Oklahoma City, read his Chairman's Address, entitled "Increasing the Awareness of Occupational Medicine in a Medical Center."

Dr. John J. Hanlon, Washington, D. C., read a paper on "The Design of Public Health Programs for Underdeveloped Areas."

Dr. Hamilton H. Anderson, San Francisco, read a paper on "International Educational Problems."

Drs. Ernst Wolff and Leona M. Bayer, San Francisco, presented a paper on "The American Physician and World Health."

Dr. Fred L. Soper, Washington, D. C., read a paper on "International Health Organization."

Dr. Frederick J. Brady, Washington, D. C., read a paper on "International Measures Against Tropical Diseases."

These papers were discussed by Drs. William Shehadi, New York; Rodney R. Beard, San Francisco; Fred L. Soper and Frederick J. Brady, Washington, D. C.; George Bevier, Santa Fe, N. Mex.; Herbert Bauer, Davis, Calif.; Hamilton H. Anderson, San Francisco; W. F. Ashe, Cincinnati, and Ernst Wolff, San Francisco.

SECTION ON RADIOLOGY

WEDNESDAY, JUNE 23—MORNING

Joint Meeting with Section on Urology

The meeting was called to order at 9 o'clock by the chairman of the Section on Radiology, Dr. Kenneth D. A. Allen, Denver. Dr. Rex E. Van Duzen, Dallas, Texas, chairman of the Section on Urology served as co-chairman of the joint meeting.

Symposium on Retroperitoneal Tumors

Dr. William James Engel, Cleveland, presented a paper on "Classification of Retroperitoneal Tumors as a Guide to Clinical Diagnosis."

Drs. Howard L. Steinbach and Donald R. Smith, San Francisco, presented a paper on "Retroperitoneal Pneumonography."

Drs. Everett L. Pirkey, John J. Robbins, John F. Berry Jr., and Lawrence A. Davis, Louisville, Ky., presented a paper on "Abdominal Arteriography: Its Value in Retroperitoneal Tumors."

Drs. Harold Fulton and William A. Evans Jr., Detroit, presented a paper on "Roentgen Examination in Retroperitoneal Tumors of Children."

Dr. Arthur T. Evans, Cincinnati, presented a paper on "Critical Evaluation of the Simultaneous Use of Various Contrast Methods in the Diagnosis of Retroperitoneal Tumors."

Drs. William E. Costolow and William R. Wisdom, Los Angeles, presented a paper on "Radiation Therapy in Retroperitoneal Tumors."

Drs. Robert T. Tidrick and M. S. Goldstein, Iowa City, presented a paper on "Surgery in Retroperitoneal Tumors."

The papers presented in the symposium were discussed by Drs. Grover C. Penberthy, Detroit; Franz J. Buschke, Seattle; Frank Hinman Jr., San Francisco; Willard E. Goodwin, Los Angeles; Charles A. Kruse, Santa Monica, Calif.; Henry Buchtel, Denver; Albert Goldstein, Baltimore; Bernard Roswit, New York; Harold McDonald, Atlanta, Ga.; and Carl Rusche, Los Angeles.

THURSDAY, JUNE 24—MORNING

Joint Meeting with Section on Diseases of the Chest

A panel discussion on "Diagnosis and Treatment of Pulmonary Diseases," was conducted by Dr. John P. Medelman, St. Paul, moderator. The participants were Drs. John F. Briggs, St. Paul, L. Henry Garland, San Francisco, and Paul C. Samson, Oakland, Calif.

A panel discussion on "Diagnosis and Treatment of Cardiovascular Diseases," was conducted by Dr. Leo G. Rigler, Minneapolis, moderator. The participants were Drs. Thomas J. Dry, Rochester, Minn.; Charles T. Dotter, Portland, Ore.; Eugene F. Van Epps, Iowa City; Forest D. Dodrill, Detroit; and John W. Kirklin, Rochester, Minn.

FRIDAY, JUNE 25—MORNING

The following officers were elected: chairman, Dr. Laurence L. Robbins, Boston; vice chairman, Dr. Leo G. Rigler, Minneapolis; secretary, Dr. Traian Leucutia, Detroit (3 years); delegate, Dr. B. R. Kirklin, Rochester, Minn.; alternate delegate, Dr. Eugene P. Pendergrass, Philadelphia; representative to the American Board of Radiology, Dr. Edward L. Jenkinson, Chicago (6 years); representative to Scientific Exhibit, Dr. Richard Chamberlain, Philadelphia.

Dr. Kenneth D. A. Allen, Denver, presented his Chairman's Address, "Radiation Therapy of Skin Cancer."

Dr. Fay K. Alexander, Philadelphia, presented a paper on "Peptic Ulceration in Children."

Drs. Paul H. Deeb and Walter L. Stilson, Los Angeles, presented a paper on "Roentgen Manifestations of Lymphosarcoma of the Stomach and Small Bowel."

The papers of Dr. Alexander and Drs. Deeb and Stilson were discussed by Drs. Henry B. Zwerling, Berkeley, Calif., Harry M. Weber, Rochester, Minn., and Walter L. Stilson and Paul H. Deeb, Los Angeles.

Drs. J. Gershon-Cohen, Mortimer B. Hermel, and Helen Ingleby, Philadelphia, presented a paper on "The Neglected Possibilities of Roentgenology in Breast Diseases," which was discussed by Dr. Martha E. Mottram, San Francisco.

Drs. André Bruwer, Robert R. Kierland, and C. W. Rucker, Rochester, Minn., presented a paper on "Unilateral Exophthalmos in Children Associated with Neurofibromatosis." This paper was discussed by Dr. Martha E. Mottram, San Francisco.

Drs. John F. Roach and Herman E. Hilleboe, Albany, N. Y., presented a paper on "Xeroradiography."

Drs. Robert J. Hasterlik and James W. J. Carpender, Chicago, presented a paper on "Radiography with a $_{69}$Thulium^{170} Source." This paper was discussed by Drs. Robert S. Stone and Earl Miller, San Francisco, J. Gershon-Cohen, Philadelphia, and Robert J. Hasterlik, Chicago.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, JUNE 23—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Emile F. Holman, San Francisco.

Drs. John C. Jones, Joseph L. Robinson, and Bert W. Meyer, Los Angeles, presented a paper, "Carcinoma of the Lung, A Study of 600 Cases," which was discussed by Drs. Michael E. DeBakey, Houston, Texas, Paul C. Samson, Oakland, Calif., and Alton Ochsner, New Orleans.

Dr. Rupert B. Turnbull Jr., Cleveland, presented a paper on "Technical Advances in the Surgical Treatment of Ulcerative Colitis." The paper was discussed by Drs. Robert A. Scarborough and Walter D. Birnbaum, San Francisco, and Leland S. McKittrick, Brookline, Mass.

Drs. Herbert H. Davis and Milton Simons, Omaha, read a paper on "Cystic Disease of the Breast," which was discussed by Drs. Orwood J. Campbell, Minneapolis, Helen Ingleby, Philadelphia, Walter G. Maddock, Chicago, and G. L. Wright, Salt Lake City.

Dr. Oliver H. Beahrs, Rochester, Minn., read a paper on "How Radical Should Radical Dissection of Neck Structures Be: A Preliminary Report." The paper was discussed by Dr. Walter W. Carroll, Chicago.

A Panel on Surgical Problems then ensued with Dr. Emile F. Holman, San Francisco, as moderator. The panel was composed of Drs. Joel W. Baker, Seattle, Leland S. McKittrick, Brookline, Mass., and Harvey B. Stone, Baltimore.

THURSDAY, JUNE 24—MORNING

The following officers were elected: chairman, Dr. Robert M. Zollinger, Columbus, Ohio; vice chairman, Dr. John D. Stewart, Buffalo; secretary, Dr. Walter G. Maddock, Chicago; delegate, Dr. Grover C. Penberthy, Detroit; representative to the Scientific Exhibit, Dr. John H. Mulholland, New York; representative to the American Board of Surgery, Dr. Harris B. Shumacker, Indianapolis.

Dr. Emile F. Holman, San Francisco, read his Chairman's Address, "The Immediate and Late Results of Radical Pericardiectomy for Constrictive Pericarditis."

Drs. R. K. Gilchrist and Stephen G. Economou, Chicago, presented a paper, "Surgical Treatment of Diverticulitis of the Sigmoid," which was discussed by Drs. Philip B. Price, Salt Lake City, E. Eric Larson, Los Angeles, R. K. Gilchrist, Chicago, and Louis E. Moon, Omaha.

Dr. Allen M. Boyden, Portland, Ore., read a paper, "Acute Conditions of the Gallbladder and the Common Duct." This paper was discussed by Drs. Carleton Mathewson Jr., San Francisco, Robert W. Zollinger, Columbus, Ohio, and Waltman Walters, Rochester, Minn.

Drs. David M. Sklaroff, Edwin M. Cohn, T. L. Orloff, and J. Gershon-Cohen, Philadelphia, presented a paper on "Visualization of the Common Bile Duct in the Post-Cholecystectomy Patient with a New Contrast Medium, Cholegrafin." The paper was discussed by Drs. I. S. Ravdin, Philadelphia, William H. Shehadi, New York, and Harold Fulton, Detroit.

Drs. I. S. Ravdin, Thomas Fitz-Hugh Jr., Charles C. Wolferth, and Robert G. Ravdin, Philadelphia, presented a paper, "The Relation of Gallstone Disease to the Symptoms of Angina Pectoris." The paper was discussed by Dr. H. Glenn Bell, San Francisco.

FRIDAY, JUNE 25—MORNING

Dr. L. S. Cherney, San Francisco, read a paper, "The Low Abdominal Transverse Incision," which was discussed by Drs. L. S. Fallis, Detroit, and Kenneth F. MacLean, Reno, Nev.

Drs. D. Emerick Szilagyi and Paul R. Overhulse, Detroit, read a paper on "Segmental Occlusive Atherosclerosis of Large Arteries of the Legs Treated by Resection and Graft Replacement." The paper was discussed by Drs. Harold P. Totten, Los Angeles, and Norman E. Freeman, San Francisco.

Drs. Alex W. Ulin, Axel K. Olsen, and William L. Martin, Philadelphia, presented a paper on "Factors Determining Mortality in Patients with Acute Head Injury." This paper was discussed by Dr. Edwin B. Boldrey, San Francisco.

Dr. Claude S. Beck, Cleveland, read a paper, "Operations for Coronary Artery Disease," which was discussed by Drs. Bernard I. Brofman, Cleveland, and Emile F. Holman, San Francisco.

A Clinical Pathological Conference was held under the direction of Dr. David A. Wood, San Francisco, in which Dr. Walter G. Maddock, Chicago, and Dr. Clarence J. Berne, Los Angeles, participated.

SECTION ON UROLOGY

WEDNESDAY, JUNE 23—MORNING

A joint meeting was held with the Section on Radiology. The proceedings are reported in the minutes of that section.

WEDNESDAY, JUNE 23—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Rex E. Van Duzen, Dallas, Texas.

The following officers were elected: chairman, Dr. Charles C. Higgins, Cleveland; vice chairman, Stanford W. Mulholland, Philadelphia; secretary, Rubin H. Flocks, Iowa City; delegate, continued for another year, Dr. Jay J. Crane, Los Angeles; alternate delegate, Dr. Earl E. Ewert, Boston; representative to Scientific Exhibit, Dr. Roger W. Barnes, Los Angeles.

Dr. Rex E. Van Duzen, Dallas, Texas, read his Chairman's Address, entitled "The Pharmacological Effect of Various Drugs on Micturition: Clinical Implications."

Symposium on the Prostate

Dr. Willard M. Drake Jr., Camden, N. J., presented a paper on "The Uroflometer in the Study of Bladder Neck Obstructions."

Drs. Constance L. Graves, Chicago; Hildegard J. Sellers Virnig, Caledonia, Minn.; and Mary Karp, Chicago, presented a paper on "Anesthesia Study of 1,200 Transurethral Prostatectomies."

Drs. George J. Bulkley, Vincent J. O'Conor, and Kenneth J. Sokol, Chicago, presented a paper on "Overhydration During Transurethral Prostatic Resection."

Dr. William P. Herbst Jr., Washington, D. C., presented a paper on "Factors Involved in the Management of Prostatic Obstructions."

Dr. Edward N. Cook, Rochester, Minn., presented a paper on "Carcinoma of the Prostate."

Dr. Grayson Carroll, St. Louis, presented a paper on "Endocrine Therapy in the Management of Carcinoma of the Prostate."

The papers presented in the symposium were discussed by Drs. J. Sydney Ritter, New York; Vincent D. Vermooten, Dallas, Texas; James C. Kimbrough, Washington, D. C.; Henry Weyrauch, San Francisco; Rubin H. Flocks, Iowa City; Rex E. Van Duzen, Dallas, Texas; George J. Bulkley, Chicago; William P. Herbst Jr., Washington, D. C.; Edward N. Cook, Rochester, Minn.; and Grayson Carroll, St. Louis.

THURSDAY, JUNE 24—AFTERNOON

Dr. Aquilino Villanueva, Mexico City, Mexico, presented a paper on "Plastic Repair of the Urethra."

Symposium on Pediatric Urology

Drs. Robert Lich Jr., and Joseph E. Maurer, Louisville, Ky., presented a paper on "Congenital Hydronephrosis."

Drs. Willard E. Goodwin, Los Angeles, and William C. Casey, Torrance, Calif., presented a paper on "Percutaneous Trocar Nephrostomy and Antegrade Pyelography in Hydronephrosis."

Dr. Donald A. Charnock, Los Angeles, presented a paper on "Management of the Dilated Ureter."

Dr. Edgar Burns, New Orleans, presented a paper on "The Management of Bladder Neck Obstruction in Children."

Drs. Robert J. Prentiss and Ralph B. Mullenix, San Diego, Calif., presented a paper on "The Medical and Surgical Treatment of Cryptorchidism."

The papers presented in the symposium were discussed by Drs. John L. Emmett, Rochester, Minn.; Donald R. Smith, San Francisco; James C. Kimbrough, Washington, D. C.; Frank Hinman Jr., San Francisco; David Falk, Bakersfield, Calif.; Harold McDonald, Atlanta, Ga.; Robert Lich Jr., Louisville, Ky.; Willard E. Goodwin and Donald A. Charnock, Los Angeles; and Robert J. Prentiss, San Diego, Calif.

Symposium on Urolithiasis

Dr. O. A. Nelson, Seattle, presented a paper on "Some Aspects of the Surgical Management of Renal and Ureteral Calculi."

Dr. Vincent D. Vermooten, Dallas, Texas, presented a paper on "Some Aspects of the Medical Management of Urinary Tract Calculi."

Drs. Harold P. McDonald, Wilborn E. Upchurch and Clinton E. Sturdevant, Atlanta, Ga., presented a paper on "Prostatic Calculi: Removal by Transurethral Resection."

The papers in the symposium were discussed by Drs. Carl Burkland, Sacramento, Calif.; Miles Griffin, San Francisco; Vincent D. Vermooten, Dallas, Texas; and Harold P. McDonald, Atlanta, Ga.

MEDICAL NEWS

ALABAMA

Ben May Lectureship.—At a meeting of the Mobile County Medical Society the first Ben May lecture was delivered by Dr. Charles B. Huggins, director of the Ben May Cancer Research Laboratory at the University of Chicago, whose topic was "Hormones in Cancer." The laboratory, established in 1951, occupies 20 rooms at the Nathan Goldblatt Memorial Hospital for Neoplastic Diseases at the university. At the dinner honoring Ben May, a Mobile business man, letters were received from Sir Alexander Fleming, London, England, Nobel laureate, discoverer of penicillin, and Prof. Arne Tiselius, Norway, Nobel prize winner in chemistry. Dr. M. Vaun Adams, Mobile, president of the Mobile County Medical Society, gave a certificate to Mr. May that read, in part, "The Mobile County Medical Society, in recognition of his contributions and of the national fame he has won as a leader in the cause of medical research, does hereby create the Ben May Lecture in the hope that this lecture will become a lasting living monument to one of our greatest citizens."

COLORADO

Society News.—At a dinner at the Greeley Country Club on June 2 the Weld County Medical Society honored the following members who had completed 50 or more years of medical practice: Drs. Charles B. Dyde, Ella A. Mead, and Nicholas A. Madler of Greeley and George E. Nelson of Windsor. Guests of the society were Drs. Claude D. Bonham, Irvin E. Hendryson, Constantine F. Kemper, Frank E. Rogers, T. Leon Howard, and Frank B. McGlone, Denver. Certificates of service were presented.

New Research Fellowships.—The National Jewish Hospital at Denver announces the creation of the Walter P. Harris fellowship in clinical research and the A. T. Hirsh fellowship in cardiopulmonary physiology. The Harris fellow will have a tenure of two to three years for studies in chest diseases under the guidance of Dr. Gardner Middlebrook, director of research and laboratories. The Hirsh fellow will have a one year tenure in cardiopulmonary physiology and experimental surgery with Dr. Alfredo Lanari, chief of the cardiopulmonary physiology laboratories. Applications for the fellowships should be directed to Dr. Gardner Middlebrook, Director of Research and Laboratories, National Jewish Hospital, Denver 6.

GEORGIA

Medicolegal Institute.—A medicolegal institute on trial technique was recently held in Savannah under the direction of Hubert Winston Smith, LL.B., M.D., director of the Law-Science Institute of the University of Texas, Austin. Participating in the panel discussions were Drs. Francis Keith Bradford and Philip Worchel, Ph.D., Houston, Texas; Winfred Overholser, Washington, D. C.; Edgar R. Pund, Augusta; Warren U. Clary, Chamblee; and Thomas R. Freeman, H. Lee Howard Jr., James C. Metts, Cornelius F. Holton, Thomas P. Waring, William D. Wilson, John L. Elliott, Emanuel F. Rosen, David Robinson, Thomas A. McGoldrick Jr., and Ellison R. Cook, Savannah.

KANSAS

Annual Research Day.—The fifth annual Student Research Day of the University of Kansas School of Medicine was observed Friday, May 7, on the Lawrence campus. The guest speaker was Dr. Harry S. N. Greene, professor of pathology at Yale University School of Medicine, New Haven, Conn., who presented "A Comparison of the Biological Behavior of Adult, Embryonic and Cancer Tissue." The first prize, the Russell L. Haden medal and $100 for the best research by a medical student, was awarded a second year medical student, Ivan D. Janosky, for his paper, "A Histochemical Study of the Glycogen in the Nervous System of the Developing Salamander Amblystoma Maculatum." A prize of $100 for the best research by a member of the house staff was awarded jointly to Dr. Charles E. Andrews, resident, and Dr. Robert L. Van Citters, intern, for their paper, "Effect of Hypothermia on Circulation, Respiration and Metabolism in the Athyroid Dog."

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

KENTUCKY

The Rankin Amphitheater.—The amphitheater of the Louisville General Hospital, which has been completely renovated, with seating capacity increased to 400, has been named the Fred W. Rankin Amphitheater in honor of the late Dr. Fred W. Rankin, who had been on the surgical staff of the University of Louisville School of Medicine for over 30 years and professor of surgery since 1941. Dr. Rankin was also a past president of the American Medical Association.

University News.—The University of Louisville School of Medicine announces the appointment of Murray M. Lipton, Ph.D., as assistant professor of child health research. Dr. Lipton will conduct his virological research in the school's Kentucky Child Health Foundation laboratory, which is under the direction of Dr. Alexander J. Steigman, professor of child health. Dr. Lipton comes to the university from the Public Health Research Institute of the City of New York.——Three new sections were recently established at the University of Louisville School of Medicine: (1) cardiovascular diseases, Dr. Herbert L. Clay, chief; (2) diseases of the chest, Dr. Oscar O. Miller, chief; and (3) gastroenterology, Dr. Samuel A. Overstreet, chief. All three physicians are residents of Louisville.——A committee of seven, including Drs. Francis M. Massie, Lexington, chairman of the medical education committee of the Fayette County Medical Society; John S. Chambers, head physician at the University of Kentucky, Lexington; and Coleman C. Johnston, Lexington, met March 13 to discuss plans for the creation of the Kentucky Medical Sciences Development Foundation to administer a program that would promote establishment of a medical school at the University of Kentucky, at an estimated cost of 25 million dollars.

MICHIGAN

Narcotic Violation.—Dr. Emery P. Kovach, 263 Mt. Vernon St., Grosse Pointe Farms, was convicted in the Michigan State Court at Detroit of violating the state narcotic law and on June 18 was sentenced to a period of five years probation and fined $1,000.

Dr. Vorwald Goes to Wayne University.—Dr. Arthur J. Vorwald, former director of the Edward L. Trudeau Foundation laboratories at Saranac Lake, N. Y., recently became head of the newly created department of industrial medicine in Wayne University College of Medicine, Detroit. A Naval captain in World War II, Dr. Vorwald served as medical attaché in the American embassy in London and was director of the medical division of the Office of Naval Research. He formerly taught at the University of Rochester and at New York University.

NEW YORK

State Medical Election.—Officers of the Medical Society of the State of New York for the ensuing year include: Dr. Dan Mellen, Rome, president; Dr. Renato J. Azzari, New York City, president-elect; Dr. Charles A. Prudhon, Watertown, vice-president; Dr. Walter P. Anderton, New York City, secretary; Dr. Ezra A. Wolff, Forest Hills, assistant secretary; Dr. Maurice J. Dattelbaum, Brooklyn, treasurer; and Dr. Thomas M. d'Angelo, Jackson Heights, assistant treasurer.

Personal.—The New York state departments of health and mental hygiene have jointly announced the assignment of Dr. Julius Katz, Albany, as director of mental hygiene and tuberculosis services. Dr. Katz has been director of the Bureau of Tuberculosis Control in State Institutions in the division of tuberculosis control, state health department, since 1947.——Dr. Marinus Van Weele, formerly of Sayville, L. I., recently joined the medical department staff of Eaton Laboratories, Inc.——Dr. William C. Van Ost, who was graduated in June from Albany Medical College of Union University, has been awarded an alumni exchange scholarship to intern at the University of Sheffield and the Royal Hospital in Sheffield, England, during the next academic year. This is the first year of the internship exchange between the University of Sheffield and the Albany Medical College.——The following appointments, which became effective July 16 in the state department of mental hygiene, have been announced by Dr. Newton J. Bigelow, commissioner of mental hygiene. Dr. George F. Etling, currently director of St. Lawrence State Hospital, Ogdensburg, will become senior medical director of Wassaic State School, and Dr. Herman B. Snow, assistant director of Utica State Hospital, will succeed him as director of St. Lawrence State Hospital. Dr. I. Murray Rossman, assistant director of Kings Park State Hospital, will become director at Gowanda State Homeopathic Hospital at Helmuth. Dr. Donald M. Carmichael, associate director, Rockland State Hospital, Orangeburg, will become director of aftercare clinics, a position equivalent in rank to director of a mental hospital.——Dr. Howard C. Stewart, Delmar, since 1947 associate public health physician in the division of tuberculosis control, New York State Department of Health, Albany, has been promoted to the position of principal public health physician.

New York City

Surgical Team to Serve in Iran.—According to an announcement from the Presbyterian Hospital, a surgeon, an anesthesiologist, and a nurse from the Columbia-Presbyterian Medical Center will form the operating room team on the initial staff of the newest hospital in the Near East, the Shiraz Medical Center in Iran. Dr. Robert B. Hiatt, assistant attending surgeon in Presbyterian Hospital and instructor in surgery in the Columbia University College of Physicians and Surgeons, will be chief of the department of surgery. Dr. Richard W. Patterson, who will be the anesthesiologist, has just completed his residency in the anesthesiological service of Presbyterian Hospital. He has been appointed an instructor in anesthesiology in the Columbia University College of Physicians and Surgeons and will be on leave of absence while in Iran. Miss Ethel Silfies, an operating room supervisor in Presbyterian Hospital since 1947, will be operating room nurse and will teach operating techniques to her assistants and the 10 Iranian girl students who have already entered the Shiraz Medical Center's first school of nursing. All three are on two year leaves of absence from Columbia-Presbyterian Medical Center. The medical center in Shiraz will open in September. Mohammed Nemazee, a Shiraz citizen, is said to have given almost all his personal fortune to build and equip the center but to have turned over operation and supervision to the Iran Foundation, Inc., a New York state organization for the advancement of health and education in Iran. Nemazee Hospital in the Shiraz center is named in his honor. The first city-wide water system in Iran was built for Shiraz by Mr. Nemazee, who has endowed the new medical center with the income from that system.

OHIO

Dr. Webster Honored.—At its annual meeting, May 21, the Academy of Medicine of Cleveland gave to Dr. Samuel J. Webster, Cleveland, its Distinguished Service award, a silver tray engraved "Presented by the Academy of Medicine of Cleveland to Samuel J. Webster, M.D., in testimony of his distinguished career which has evoked the love and admiration of his patients and colleagues."

Cancer Clinic Will Move.—All operations and services of the 33-year-old Columbus Cancer Clinic, now at 221 E. State St., will be moved to the cancer wing of the Ohio State University medical center Sept. 30. Medical director and assistant medical director, respectively, of the Columbus Cancer Clinic are Dr. Charles A. Doan, dean of the Ohio State University College of Medicine, and Dr. Arthur D. James.

PENNSYLVANIA

Reorganize State Health Department.—As part of its reorganization plan, the Pennsylvania State Department of Health has appointed Dr. J. Thomas Millington, Wilkes-Barre, as director of preventive services, Dr. Carl C. Kuehn, Pittsburgh, director of local health services, and Karl M. Mason, M.P.H., Camp Hill, director of environmental health services. For eight years Dr. Millington has been the state district medical director in Luzerne County. He is president-elect of the Pennsylvania Public Health Association. Dr. Kuehn, deputy director of the city of Pittsburgh department of public health, was formerly director of preventive medicine for the Louisiana state board of health. Mr. Mason, who has been head of the office of professional training in the state health department since the summer of 1951, was previously director of the field training center of the U. S. Public Health Service, Pittsburgh.

Philadelphia

Expansion at Temple University Medical Center.—The new 10 story, air-conditioned building erected by Temple University at Broad and Tioga St. will accommodate 400 patients and will connect, along Park Ave., with an 8 story outpatient building

New buildings for Temple University Medical Center.

designed to permit 400,000 visits a year. A third building will house the main kitchen and dining room, the diagnostic and therapeutic departments for radiology, and an operating pavilion consisting of 12 operating rooms and induction and recovery rooms. With the completion of these facilities, Temple University Medical Center will have a total bed capacity of 1,000 and will be among the larger, fully equipped, modern teaching centers. Construction, begun in October, 1953, is expected to be completed in 1956. The cost of these improvements, which are north of the present hospital and connected with it, will be $10,500,000.

TEXAS

McLaughlin Fellowship Fund.—Through a bequest of the late Mr. A. C. McLaughlin of California, the James W. McLaughlin Fellowship Fund has been established at the University of Texas Medical Branch, Galveston, to honor the late Dr. James W. McLaughlin, formerly professor of internal medicine of the Medical Branch and regent of the University of Texas. The James W. McLaughlin fellowships for the investigation of infection and immunity provide funds to support predoctoral and postdoctoral as well as senior and faculty fellowships. Fellowships will be made available for one year with opportunities for renewal in certain instances. Application may be made to the executive director of the University of Texas Medical Branch, Galveston.

University News.—Dr. George W. N. Eggers, professor of orthopedic surgery, University of Texas Medical Branch, Galveston, has been on a six weeks' tour of medical installations and hospitals in Japan and Korea.——A chapter of the Sigma Xi National Scientific Honor Society has been established at the University of Texas Medical Branch, Galveston. Installation ceremonies were conducted by George H. Boyd, Sc.D., dean of the University of Georgia, Athens.——Dr. Vernie A. Stembridge Jr., associate professor of pathology, University of Texas Medical Branch, Galveston, has been appointed coordinator of cancer studies at the Medical Branch.——At the 50th reunion of the class of 1904 of the University of Texas School of Medicine, Galveston, Dr. Paul R. Stalnaker of Houston presented the library of the University of Texas Medical Branch with portraits of his father, Dr. John William Stalnaker (1831-1883), and of Dr. Horace T. Aynesworth of Waco, a classmate. Dr. John William Stalnaker was a pioneer Texas surgeon and coauthor of the "Manual of Military Surgery of the Confederate Army." Dr. Aynesworth is a past president of the Academy of Ophthalmology.

WEST VIRGINIA

Legal Decision on Chiropody.—In an opinion handed down by John G. Fox, attorney general, June 22, chiropodists were held to be duly licensed physicians and authorized to participate in medical service programs under the provisions of chapter 31, article 13, of the Code of West Virginia, provided the medical service contract includes within its scope those things which may properly be treated by a chiropodist.

State Medical Meeting.—The West Virginia State Medical Association will hold its annual meeting at the Greenbrier, White Sulphur Springs, Aug. 19 to 21. The evening before the general sessions the association will hold its first open, statewide public relations conference, Dr. Charles E. Staats, Charleston, presiding, at 9 p. m. Guest speakers will include Dr. George F. Lull, Secretary and General Manager, American Medical Association; Mr. George Connery, Editor, A. M. A. offices, Washington, D. C.; and Dr. Albert C. Esposito, Huntington. From 6 to 9 on the same evening the West Virginia Pediatrics Society will have an open organization meeting, to be followed by a social hour and dinner at which the Baker Laboratories, Cleveland, will be host. Dr. Russel Kessel, Charleston, president, West Virginia State Medical Association, will deliver the address of welcome at 9:15 a. m. Thursday, after which Dr. Theodore P. Mantz, Charleston, will serve as moderator for a symposium on cancer and for the panel discussion that will follow. Collaborators will be Drs. John S. LaDue, Irving M. Ariel, and George T. Pack, New York. Thursday afternoon Dr. Pack will be guest speaker at the joint meeting of the sections on orthopedic surgery and radiology. Dr. Ariel will be guest speaker Thursday afternoon for the section on surgery. Thursday at 9 p. m. Dr. Walter B. Martin, Norfolk, Va., President of the American Medical Association, will discuss at an open meeting "Medical Care of the Low Income Groups." At 2 p. m. the subjects presented at the Friday morning session will be discussed by a panel in an open joint meeting of the scientific assembly, West Virginia Heart Association, West Virginia Diabetes Association, section on internal medicine, and section on neurology, neurosurgery, and psychiatry. At the meeting of the section on neurology, neurosurgery, and psychiatry, 3:30 p. m., Dr. James S. Browning, Indianapolis, will present "Some Psychosomatic Factors of Geriatrics" and Dr. Robert S. Garber, Trenton, N. J., "Report on Psychosurgery." At 2 p. m. the sections on pediatrics and industrial medicine and public health will hold a joint meeting that will be addressed by Dr. R. Cannon Eley, Boston, whose topic will be "An Evaluation of Prophylaxis in Acute Poliomyelitis." Among the other out-of-state speakers will be Drs. George O. Burch, New Orleans; Cyrus C. Sturgis, Ann Arbor, Mich.; Philip Thorek, Chicago; Albert E. Goldstein, Baltimore; and Garfield G. Duncan and Charles P. Bailey, Philadelphia. All physicians, wives, and guests are invited to the cocktail hour Saturday, 6 to 7:30 p. m. Motion pictures will be shown each morning at 8:30. The golf tournament will begin Thursday afternoon.

GENERAL

Markle Foundation Moves.—The John and Mary R. Markle Foundation has moved from 14 Wall St. to its new headquarters, 511 Fifth Ave., New York 17, at 43rd St. (telephone: OXford 7-2847).

Inter-American Surgical Cruise.—The American College of Surgeons, which will hold its third inter-American session in Lima, Peru, Jan. 11 to 15, 1955, has announced arrangements for a cruise on the R.M.S. Mauretania, sailing from New York Dec. 29 and returning to New York Jan. 27. Scientific sessions will be presented on shipboard, and visits to medical institutions will be made at ports of call en route to Lima. Information may be obtained from the college, 40 E. Erie St., Chicago 11.

Medical Fellowships Awarded.—Dr. Franklin C. McLean, Chicago, secretary and treasurer of National Medical Fellowships, Inc., announces that grants totaling $80,000 were awarded to 51 Negro physicians and students of medicine and related fields for the year 1954-1955 and $14,000 was made available for loans. National Medical Fellowships, Inc. (951 E. 58th St., Chicago) was incorporated in 1946 as a nonprofit organization to improve medical practice through the advancement of education and research. At the present time the organization limits its activities to the field of Negroes in medicine. Inquiries by qualified applicants are welcome.

Leukemia Studies Section.—A leukemia studies section has been established in the Laboratory of Biology, National Cancer Institute, Bethesda, Md. It will be directed by Lloyd W. Law, Ph.D., Public Health Service officer, who has been studying factors affecting the development of leukemia in laboratory animals since he joined the institute in 1947. Dr. George H. Hogeboom, who has worked in the Laboratory of Biology since he joined the National Cancer Institute in 1948 and has been head of the cell chemistry unit of the cellular biology section since 1950, will be head of the cellular biology section of the Laboratory of Biology.

Memorial Fund Grants.—The Jane Coffin Childs Memorial Fund for Medical Research (333 Cedar St., New Haven 11, Conn.) has announced the appropriation of $258,329 for support of cancer research projects and fellowships. The largest grants were made for three-year periods (1954-1957) to Dr. Harry S. N. Greene, professor of pathology, Yale University School of Medicine, New Haven, Conn., $76,440 for a biological study of cancer, and to Dr. Leon L. Miller, associate professor of radiation biology, University of Rochester School of Medicine and Dentistry, $67,500 for (1) physiological chemical studies of protein synthesis as related to neoplastic growth and (2) steroid hormone metabolism in normal and tumor-bearing animals.

Hospital Survey.—According to the American Hospital Association, United States hospitals cared for 20,183,827 patients in 1953, the first year in history that the patient total exceeded 20 million. Furthermore, 3,100,000 babies were born in hospitals in that year. United States hospitals spent $4,700,000 to care for these patients and newborn infants, as compared with a total expenditure of $4,400,000 in 1952. The nonprofit general hospitals, which care for most of the acute, short-term illnesses in the nation, spent an average of $21.09 per day per patient. This compares with an average expenditure of only $2.83 per day for each patient in the mental hospitals. Mental hospitals account for 44% of the nation's total of 1,580,654 hospital beds. Total income from patients in nonprofit general hospitals in 1953 was $1,921,429,000, and expenses totaled $2,079,692,000. The average patient stay in the short-term, general hospital was reduced from 8.1 days in 1952 to 7.9 days in 1953. Based on the 1953 experience it is expected that one of every eight persons in the United States will be a hospital patient in 1954. More than 91 million persons are now protected against illness and injury expense in voluntary hospital prepayment plans, and one of every 60 of the nation's workers is employed in hospitals. With a total payroll of $2,987,265,000 in 1953, the hospitals had 1,168,564 full-time employees. Assets of all hospitals in 1953 totaled 10 billion dollars.

Medical Research Fellowships.—The division of medical sciences of the National Academy of Sciences-National Research Council is accepting applications for postdoctoral research fellowships for 1955-1956. These awards are designed to offer experience for promising persons who plan investigative careers, not to provide practical experience in the clinical field. Ordinarily fellowships are not granted to persons over 35 years of age. The following programs are announced:

Fellowships in cancer research, awarded by the American Cancer Society on recommendation of the committee on growth, division of medical sciences, are available for study in all branches of the biological, chemical, and physical sciences and of clinical investigation applicable to the study of growth, typical or malignant. Citizens of the United States are eligible.

British-American exchange fellowships in cancer research, awarded by the American Cancer Society on recommendation by the committee on growth, are offered to citizens of the United States for advanced study in Great Britain in specialized fields pertaining to the problem of growth. Similar fellowships are awarded by the British Empire Cancer Campaign to young British scientists for research in the United States.

Fellowships in the medical sciences, supported by the Rockefeller Foundation and by the Lilly Research Laboratories, are administered by the medical fellowship board of the division. Fellows are expected to devote themselves to research in the basic medical sciences. The fellowships administered for the Rockefeller Foundation are open to citizens of the United States and Canada; the Lilly fellowships to citizens of the United States.

Fellowships in tuberculosis, administered by the medical fellowship board under a grant from the National Tuberculosis Association, are designed to promote the development of investigators in fields related to tuberculosis. They are open to citizens of the United States who are graduates of American schools.

Fellowships in radiological research are administered for the James Picker Foundation by the division's committee on radiology. The foundation has expressed particular interest in the support of candidates who propose to carry on research oriented toward the diagnostic aspects of radiology. Appointments are not limited to citizens of the United States.

Applications for 1955-1956 under any of these programs must be postmarked on or before Dec. 10, 1954. Fellowships are awarded in the early spring. Complete details and application blanks may be obtained from the Fellowship Office, National Academy of Sciences-National Research Council, 2101 Constitution Ave., N.W., Washington 25, D. C.

Pamphlet on Planned Parenthood.—In the revised edition of its brochure, "To Those Denied a Child," the Planned Parenthood Federation of America, Inc., includes a geographic listing of infertility services throughout the United States. The federation reports that there are now 151 infertility clinics, compared to 67 in 1949. In addition, there are 62 referral services to other clinics and private physicians. Affiliates of the federation operate 28 clinics and 60 referral services. The association, in a recent survey of clinics throughout the United States on their results over the last 30 years, revealed that in 13,051 patients treated in clinics responding to the survey, 3,026 pregnancies resulted—a 23.2% success ratio. If the survey had been confined to the last five years, according to Dr. Mary Steichen Calderone, Great Neck, N. Y., medical director of the federation, the ratio would have been closer to one-third. The survey, said to be the first of its kind, included results from clinics at the Free Hospital for Women in Brookline, Mass.; Yale University, New Haven, Conn.; Mount Sinai Hospital, New York; Massachusetts General Hospital, Boston; Jefferson Medical College Hospital, Philadelphia; Washington University, St. Louis; and Chicago Lying-In Hospital. The 36 page booklet, which outlines for the layman the steps required to treat infertility and contains the listing of clinics and referral services, is available for 10 cents from the Planned Parenthood Federation of America, 501 Madison Ave., New York 22.

Society News.—Newly elected officers of the **Neurosurgical Society of America** include Dr. C. Douglas Hawkes, Memphis, Tenn., president; Drs. Carl J. Graf, Buffalo, and Charles L. Neill Jr., Jackson, Miss., vice-presidents; Dr. Lester A. Mount, New York, secretary; and Dr. I. Joshua Speigel, Chicago, treasurer. ——Newly elected officers of the **Pan-American Medical Women's Alliance** include: Dr. Jessie Laird Brodie, Portland, Ore., president; Dr. Tegualda Ponce, Valparaiso, Chile, president-elect; Dr. Gloria Alonso de May, Montevideo, Uruguay, vice-president; Dr. Eva F. Dodge, Little Rock, Ark., secretary; and Dr. Eva Goddin Cutright, Wooster, Ohio, treasurer.——At the annual meeting of the **American College of Cardiology** in Chicago, Dr. Ashton Graybiel, Pensacola, Fla., was inducted as president; Dr. Walter S. Priest, Chicago, was chosen president-elect; Drs. Richard J. Bing, Birmingham, Ala., David B. Dill, Ph.D., Army Chemical Center, Md., Seymour Fiske, New York, and John C. Krantz Jr., Ph.D., Baltimore, vice-presidents; and Dr. Philip Reichert, New York, secretary-treasurer.——The **Tri-State Radiological Society** was recently formed to serve the radiologists in southern Indiana, northwestern Kentucky, and southeastern Illinois. The following officers were elected: president, Dr. Maurice D. Fitzgerald, Evansville, Ind.; vice-president, Dr. Harold A. Elkins, Mt. Carmel, Ill.; and secretary-treasurer, Dr. Stephen N. Tager, Evansville, Ind. Meetings will be held the last Wednesday of October, January, March, and May, 8 p. m., at the Elks Club in Evansville. At the last meeting Dr. Alfred I. Sherman, St. Louis, presented an illustrated lecture, "Use of Radioactive Gold in the Treatment of Cervical Carcinoma."

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

Area	July 10, 1954: Paralytic Type	July 10, 1954: Total Cases Reported	July 11, 1953 Total
New England States			
Maine	1	1	4
New Hampshire	..	..	2
Vermont	1	1	3
Massachusetts	1	6	6
Rhode Island	..	..	2
Connecticut	..	8	14
Middle Atlantic States			
New York	7	22	53
New Jersey	3	7	14
Pennsylvania	..	11	15
East North Central States			
Ohio	10	35	66
Indiana	2	7	17
Illinois	6	25	57
Michigan	13	34	34
Wisconsin	1	3	13
West North Central States			
Minnesota	4	12	36
Iowa	4	26	8
Missouri	2	14	24
North Dakota	..	1	..
South Dakota	..	1	5
Nebraska	5	9	12
Kansas	3	14	19
South Atlantic States			
Delaware	..	..	..
Maryland	2	2	5
District of Columbia	..	..	3
Virginia	4	10	39
West Virginia	1	4	21
North Carolina	3	11	73
South Carolina	4	11	8
Georgia	4	19	26
Florida	14	47	18
East South Central States			
Kentucky	8	12	18
Tennessee	..	13	31
Alabama	..	19	23
Mississippi	10	33	29
West South Central States			
Arkansas	7	15	17
Louisiana	3	7	36
Oklahoma	5	26	25
Texas	60	145	89
Mountain States			
Montana	..	1	1
Idaho	..	..	..
Wyoming	1	19	1
Colorado	4	8	3
New Mexico	No report		6
Arizona	1	7	9
Utah	..	1	3
Nevada	..	5	6
Pacific States			
Washington	5	5	7
Oregon	3	9	4
California	52	92	45
Territories and Possessions			
Alaska	7	9	5
Hawaii	1	5	2
Puerto Rico	..	..	1
Total	262	772	958

Blindness Among Preschool Children.—The National Society for the Prevention of Blindness has issued a pamphlet, "Blindness in Preschool Children," in which C. Edith Kerby, associate for analysis and statistics for the society, points out that blindness among preschool children in the United States increased 50% during a seven year test period (1943 to 1950). Agencies in 22 states, the District of Columbia, and Hawaii cooperated in the survey of the ophthalmological records of 2,800 blind children. According to the study, about 96% of blindness among preschool children occurs before the first birthday. Half of this blindness is due to retrolental fibroplasia, which increased from 1.4 cases per 100,000 births in 1943 to 10.9 in 1950. Sight-robbing infectious diseases dropped from 2 cases per 100,000 to 1 case, and blindness due to eye injuries from 1.1 to 0.6. According to Miss Kerby, one reason for the rising number of blind preschool children is "a factor which is generally not appreciated . . . the effect of the increase in population under 7 years of age that occurred between 1943 and 1950, due to a substantial rise in the birth rate since the end of World War II." Miss Kerby points out that over 75% of the blindness in children of preschool age is still classified as due to causes whose fundamental nature is not known. "Broadened public support for more research is urgently needed today," she adds, "to determine the factors responsible for this and other types of maldevelopment of the eyes. We need, also, more intensive study of the heredity factor and more effective use of this information." The program of research, education, and service of the National Society for the Prevention of Blindness (1790 Broadway, New York 19) is supported entirely by voluntary contributions. Dr. Franklin M. Foote is executive director.

FOREIGN

Congress of Doctor-Motorists.—The first international postwar congress of the International Union of Associations of Doctor-Motorists will convene in Vienna, Austria, Sept. 8 to 11, to discuss "Physician and Traffic Safety." Attempts will be made to find ways and means, applicable internationally, of reducing traffic accidents. A precongress rally (Sept. 4 to 8) is being arranged through Austria up to Vienna as a medical study tour covering the most important spas and health resorts. The conference is being organized by the Ärztliche Kraftfahrvereinigung Österreichs, Weihburggasse 10-12, Vienna 1, Austria.

CORRECTION

President of Diabetes Association.—In a release from New York University quoted in THE JOURNAL, July 17, page 1083, Dr. Herbert Pollack was mentioned as president of the American Diabetes Association, whereas he is president of the New York Diabetes Association. Dr. Henry B. Mulholland, Charlottesville, Va., was installed as president of the American Diabetes Association at the annual meeting, recently held in San Francisco.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.
1954 Clinical Meeting, Miami, Florida, Nov. 29-Dec. 2.
1955 Annual Meeting, Atlantic City, N. J., June 6-10.
1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.
1956 Annual Meeting, Chicago, June 11-15.

AMERICAN MEDICAL ASSOCIATION PUBLIC RELATIONS INSTITUTE, Drake Hotel, Chicago, Sept. 1-2. Mr. Leo E. Brown, 535 N. Dearborn St., Chicago 10, Director.

ALASKA TERRITORIAL MEDICAL ASSOCIATION, Mt. McKinley Park Hotel, Mt. McKinley Park, Aug. 15-17. Dr. William P. Blanton, P.O. Box 2569, Juneau, Secretary.

AMERICAN ASSOCIATION OF BLOOD BANKS, The Shoreham, Washington, D. C., Sept. 13-16. Miss Marjorie Saunders, 3500 Gaston Ave., Dallas 4, Texas, Secretary.

AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS, The Homestead, Hot Springs, Va., Sept. 9-11. Dr. Frank R. Lock, Bowman Gray School of Medicine, Winston-Salem, N. C., Secretary.

AMERICAN CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION, Hotel Statler, Washington, D. C., Sept. 6-11. Dr. Walter J. Zeiter, 30 N. Michigan Ave., Chicago 2, Executive Director.

AMERICAN HOSPITAL ASSOCIATION, Palmer House, Chicago, Sept. 13-16. Dr. E. L. Crosby, 18 East Division St., Chicago 10, Director.

AMERICAN MEDICAL WRITERS' ASSOCIATION, Hotel Sherman, Chicago, Sept. 24. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

AMERICAN OTORHINOLOGIC SOCIETY FOR PLASTIC SURGERY, The Waldorf-Astoria, New York, Sept. 19. Dr. Louis J. Feit, 66 Park Ave., New York, Secretary.

AMERICAN ROENTGEN RAY SOCIETY, Shoreham Hotel, Washington, D. C., Sept. 21-24. Dr. Barton R. Young, Germantown Hospital, Philadelphia 44, Secretary.

AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS, Shoreham Hotel, Washington, D. C., Sept. 6. Dr. Clyde G. Culbertson, 1040-1232 W. Michigan St., Indianapolis, Secretary.

AMERICAN VETERINARY MEDICAL ASSOCIATION, Olympic Hotel, Seattle, Aug. 23-26. Dr. J. G. Hardenbergh, 600 South Michigan Blvd., Chicago 5, Executive Secretary.

COLLEGE OF AMERICAN PATHOLOGISTS, The Shoreham, Washington, D. C., Sept. 12. Dr. Arthur H. Dearing, 203 N. Wabash Ave., Chicago 1, Executive Secretary.

COLORADO STATE MEDICAL SOCIETY, Broadmoor Hotel, Colorado Springs, Sept. 21-24. Mr. Harvey T. Sethman, 835 Republic Building, Denver 2, Executive Secretary.

INDUSTRIAL HEALTH CONFERENCE (Houston), Shamrock Hotel, Houston, Tex., Sept. 23-25. Dr. Sidney Schnur, 411 Medical Arts Bldg., Houston 2, Tex., Chairman.

KENTUCKY STATE MEDICAL ASSOCIATION, Brown Hotel, Louisville, Sept. 21-23. Dr. Bruce Underwood, 620 S. Third St., Louisville 2, Secretary.

MICHIGAN STATE MEDICAL SOCIETY, Sheraton-Cadillac Hotel, Detroit, Sept. 29-Oct. 1. Dr. L. Fernald Foster, 606 Townsend St., Lansing 15, Secretary.

MISSISSIPPI VALLEY MEDICAL SOCIETY, Hotel Sherman, Chicago, Sept. 22-24. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

MONTANA MEDICAL ASSOCIATION, Hotel Finlen, Butte, Sept. 16-19. Mr. L. R. Hegland, 1236 N. 28th St., Billings, Executive Secretary.

NATIONAL MEDICAL ASSOCIATION, Washington, D. C., Aug. 9-13. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., Executive Secretary.

PACIFIC DERMATOLOGIC ASSOCIATION, Broadmoor Hotel, Colorado Springs, Colo., Sept. 2-4. Dr. Ben A. Newman, 436 N. Roxbury Drive, Beverly Hills, Calif., Secretary.

REGIONAL MEETINGS, AMERICAN COLLEGE OF PHYSICIANS:
Bismarck, N. D., Sept. 11. Dr. Robert B. Radl, 221 Fifth St., Bismarck, N. D., Governor.

RENO SURGICAL SOCIETY, Reno, Nev., Aug. 19-21. Dr. James R. Herz, 508 Humboldt St., Reno, Nev., Secretary.

ROCKY MOUNTAIN RADIOLOGICAL SOCIETY, Shirley-Savoy Hotel, Denver, Aug. 19-21. Dr. John H. Freed, 227 Sixteenth St., Denver 2, Secretary.

SOUTHWESTERN SURGICAL CONGRESS, Skirvin Hotel, Oklahoma City, Sept. 20-22. Dr. C. R. Rountree, 1227 Classen Drive, Oklahoma City 3, Secretary.

THE CONSTANTINIAN SOCIETY, The Broadmoor, Colorado Springs, Colo., Sept. 26-29. Dr. C. F. Shook, P. O. Box 1035-36, Toledo 1, Ohio, Secretary.

U. S. CHAPTER, INTERNATIONAL COLLEGE OF SURGEONS, Chicago, Sept. 7-10. Dr. Karl Meyer, 1516 Lake Shore Dr., Chicago, Secretary.

WASHINGTON STATE MEDICAL ASSOCIATION, Davenport Hotel, Spokane, Sept. 18-22. Dr. Bruce Zimmerman, 1309 Seventh Ave., Seattle 1, Secretary.

WESTERN ASSOCIATION OF RAILWAY SURGEONS, Sun Valley, Idaho, Sept. 23-25. Dr. Leo L. Stanley, 1322 Fifth Ave., San Rafael, Calif., Secretary.

WEST VIRGINIA STATE MEDICAL ASSOCIATION, The Greenbrier, White Sulphur Springs, Aug. 19-21. Mr. Charles Lively, P.O. Box 1031, Charleston, Executive Secretary.

FOREIGN AND INTERNATIONAL

COMMONWEALTH HEALTH AND TUBERCULOSIS CONFERENCE, Royal Festival Hall, London, England, June 21-25, 1955. Mr. J. H. Harley Williams, Tavistock House North, Tavistock Square, London, W.C.1, England, Secretary General.

CONFERENCE OF INTERNATIONAL UNION AGAINST TUBERCULOSIS, Madrid, Spain, Sept. 26-Oct. 2, 1954. Secretariat, Escuela de Tisiologia, Ciudad Universitaria, Madrid, Spain.

CONGRESS OF INTERNATIONAL ASSOCIATION FOR THE PREVENTION OF BLINDNESS, New York, N. Y., U. S. A., Sept. 12-17, 1954. Professor Franceschetti, 2 Avenue Mirmot, Geneva, Switzerland, Secretary-General.

CONGRESS OF THE INTERNATIONAL DIABETES FEDERATION, Cambridge, England, July 4-8, 1955. Mr. James G. L. Jackson, 152 Harley St., London, W.1, England, Executive Secretary General.

CONGRESS OF INTERNATIONAL SOCIETY OF MEDICAL HYDROLOGY, Vichy, Paris, and Enghien, France, Sept. 24-27, 1954. For information write: Dr. Giulio Ammirandoli, Via Della Torretta 11, Montecatini Terme, Italy.

INTER-AMERICAN CONGRESS OF RADIOLOGY, Shoreham Hotel, Washington, D. C., U. S. A., April 24-29, 1955. Dr. Eugene P. Pendergrass, 3400 Spruce St., Philadelphia 4, Pa., U. S. A., Secretary General.

INTER-AMERICAN SESSION, AMERICAN COLLEGE OF SURGEONS, Universidad Mayor de San Marcos de Lima, Lima, Peru, S. A., Jan. 11-14, 1955. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Ill., U. S. A., Secretary.

INTERNATIONAL ANESTHESIA RESEARCH SOCIETY, Ambassador Hotel, Los Angeles, Calif., U. S. A., Oct. 10-14, 1954. For information write: Dr. T. H. Seldon, 102-110 Second Avenue S.W., Rochester, Minn., U. S. A.

INTERNATIONAL CONGRESS OF CLINICAL PATHOLOGY, Washington, D. C., U. S. A., Sept. 6-10, 1954. Dr. Robert A. Moore, University of Pittsburgh, Schools of the Health Profession, Pittsburgh 13, Pa., U. S. A., Chairman, Committee on Arrangements.

INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST, Barcelona, Spain, Oct. 4-8, 1954. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Ill., U. S. A., Executive Secretary.

INTERNATIONAL CONGRESS ON GROUP PSYCHOTHERAPY, Toronto, Ontario, Canada, Aug. 12-14, 1954. Dr. J. L. Moreno, Room 327, 101 Park Ave., New York 17, N. Y., U. S. A., Director of Organizing Committee.

INTERNATIONAL CONGRESS OF HEMATOLOGY, Paris, Sept. 6-11, 1954. Dr. Jean Bernard, 86 rue d'Assas, Paris 6°, France, Secretary.

INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE, Rome and Salerno, Italy, Sept. 13-20, 1954. For information write: Segreteria XIV Congresso Internazionale di Storia della Medicina, Instituto di Storia della Medicine, Citta Universitaria, Rome, Italy.

INTERNATIONAL CONGRESS OF HYDATID DISEASE, Madrid, Spain, Sept. 25-30, 1954. Dr. Jesus Calvo Melendro, Hospital Provincial, Sorea, Spain, Secretary General.

INTERNATIONAL CONGRESS OF INDUSTRIAL MEDICINE, Naples, Italy, Sept. 13-19, 1954. Professor Scipione Caccuri, Director, Institute of Industrial Medicine Policlinico, Naples, Italy, Chairman, Organizing Committee.

INTERNATIONAL CONGRESS OF INTERNAL MEDICINE, Stockholm, Sweden, Sept. 15-18, 1954. Professor Anders Kristenson, Karolinska Sjukhuset, Stockholm 60, Sweden, Secretary-General.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, University of Toronto, Toronto, Ontario, Canada, Aug. 14-21, 1954. For information write: Executive Officer, International Congress on Mental Health, 111 St. George St., Toronto, Ontario, Canada.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, Luxemburg, Luxemburg, Nov. 7-12, 1954. Colonel A. R. Vernengo, Direcion General de Sanidad Militar, Pozos 2045, Buenos Aires, Argentine, S. A., Secretary General.

INTERNATIONAL CONGRESS OF NUTRITION, Amsterdam, Netherlands, Sept. 13-17, 1954. Dr. M. van Eekelen, Centraal Instituut voor Voedingsonderzoek T.N.O., 61 Catharynesingel, Utrecht, Netherlands, General Secretary.

INTERNATIONAL CONGRESS OF OPHTHALMOLOGY, University of Montreal and McGill University, Montreal, Canada, Sept. 9-11, 1954, and Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 12-17, 1954. Dr. William L. Benedict, 100 First Avenue Building, Rochester, Minn., U. S. A., Secretary-General.

INTERNATIONAL CONGRESS OF ORTHOPEDIC SURGERY AND TRAUMATOLOGY, Berne, Switzerland, Aug. 30-Sept. 3, 1954. For information write: Professor M. Dubois, Isle-Hospital, Berne, Switzerland.

INTERNATIONAL FEDERATION OF MEDICAL STUDENT ASSOCIATIONS, Rome, Italy, Oct. 1-5, 1954. Mr. Jorgen Falck Larsen, 12, Kristianiagade, Copenhagen Ø, Denmark, General Secretary.

INTERNATIONAL HOSPITAL CONGRESS, Lucerne, Switzerland, May 30-June 3, 1955. Capt. J. E. Stone, International Hospital Federation, 10 Old Jewry, London, E.C.2, England, Hon. Secretary.

INTERNATIONAL INSTITUTE ON CHILD PSYCHIATRY, Toronto, Canada, Aug. 13-14, 1954. Miss Helen Speyer, International Association for Child Psychiatry, 1790 Broadway, New York 19, N. Y., U. S. A., Executive Officer.

INTERNATIONAL POLIOMYELITIS CONGRESS, University of Rome, Orthopedic Clinic, Rome, Italy, Sept. 6-10, 1954. Mr. Stanley E. Henwood, 120 Broadway, New York 5, N. Y., U. S. A., Executive Secretary.

INTERNATIONAL SOCIETY OF BLOOD TRANSFUSION, Paris, France, Sept. 12-19, 1954. For information write: Colonel Julliard, Société Internationale de Transfusion Sanguine, 53 boulevard Diderot, Paris 12°, France.

INTERNATIONAL SOCIETY FOR CELL BIOLOGY, Leiden, Netherlands, Sept. 1-8, 1954. Professor Peter J. Gaillard, University of Leiden, Leiden, Netherlands, Secretary.

INTERNATIONAL SOCIETY OF GEOGRAPHICAL PATHOLOGY, Washington, D. C., U. S. A., Sept. 6-10, 1954. Professor Fred C. Roulet, Hebelstrasse 24, Basel, Switzerland, Secretary-General.

INTERNATIONAL SURGICAL CONGRESS, Geneva, Switzerland, May 23-26, 1955. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary General.

JAPAN MEDICAL CONGRESS, Kyoto University and Kyoto Prefectural Medical College, Kyoto, Japan, April 1-5, 1955. Dr. Mitsuharu Goto, University Hospital, Medical Faculty of Kyoto University, Kyoto, Japan, Secretary General.

LATIN AMERICAN CONGRESS OF ANESTHESIOLOGY, Sao Paulo, Brazil, S. A., Sept. 12-18, 1954. Dr. Zairo E. G. Vieira, Praca Floriano, 55-7°, And., Rio De Janeiro, Brazil, S. A., Secretario.

LATIN AMERICAN CONGRESS OF PHYSICAL MEDICINE, Lima, Peru, S. A., Feb. 14-19, 1955. Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, N. Y., U. S. A., Executive Director.

MEDICAL JOURNALISM MEETING, Exposition Universelle Romaine, Rome, Italy, Sept. 30, 1954. Dr. H. Clegg, B.M.A. House, Tavistock Square, London W.C.1, England, Secretary.

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION CONGRESS, Lake Garda, Italy, Sept. 15-21, 1954. Dr. Ada Chree Reid, 118 Riverside Drive, New York 24, N. Y., U. S. A., President.

PAN AMERICAN HOMEOPATHIC MEDICAL CONGRESS, Hotel Gloria, Rio de Janeiro, Brazil, S. A., Oct. 2-13, 1954. Dr. Paul S. Schantz, 103 West Main St., Ephrata, Pa., U. S. A., Executive Secretary.

PAN-PACIFIC SURGICAL CONGRESS, Honolulu, Hawaii, Oct. 7-18, 1954. Dr. F. J. Pinkerton, Suite 7, Young Bldg., Honolulu 13, Hawaii, Director General.

WORLD CONGRESS OF CARDIOLOGY, Washington, D. C., U. S. A., Sept. 12-18, 1954. Dr. L. W. Gorham, 44 East 23d St., New York 10, N. Y., U. S. A., Secretary-General.

WORLD CONGRESS OF INTERNATIONAL SOCIETY FOR THE WELFARE OF CRIPPLES, Scheveningen-The Hague, Netherlands, Sept. 13-17, 1954. Secretariat: Miss H. P. Post, Pieter Lastmarkade 37, Amsterdam Z, Netherlands.

WORLD FEDERATION OF OCCUPATIONAL THERAPISTS, Edinburgh, Scotland, August 17, 1954.

WORLD MEDICAL ASSOCIATION, Rome, Italy, Sept. 26-Oct. 2, 1954. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary-General.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* Held in approved medical schools where there are five or more candidates. Dates: Sept. 7-8 (Part I only). Candidates may file examinations at any time but the National Board must receive them at least six weeks before the date of the examination they wish to take. New candidates should apply by formal registration; registered candidates should notify the board by letter. Sec., Dr. John P. Hubbard, 133 S. 36th St., Philadelphia 4.

BOARDS OF MEDICAL EXAMINERS

ARIZONA:* *Examination and Reciprocity.* Phoenix, Oct. 13-15, Jan. 12-14, 1955 and April 13-15, 1955. Ex. Sec., Mr. Robert Carpenter, 401 Security Bldg., Phoenix.

CALIFORNIA: *Written.* San Diego, Aug. 23-26; Sacramento, Oct. 18-21. *Oral.* San Diego, Aug. 21; Los Angeles, Nov. 20. *Oral and Clinical Examination for Foreign Medical School Graduates.* Sec., Dr. Louis E. Jones, 1020 N Street, Sacramento.

ILLINOIS: *Examination and Reciprocity.* Chicago, Oct. 5-7. Supt. of Registration, Mr. Frederic B. Selcke, Capitol Bldg., Springfield.

MINNESOTA:* *Examination and Reciprocity.* Minneapolis, Oct. 19-21. Sec., Dr. E. M. Jones, 230 Lowry Medical Arts Bldg., St. Paul 2.

MONTANA: *Examination and Reciprocity.* Helena, Oct. 4. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

NEW HAMPSHIRE: *Examination and Reciprocity.* Concord, Sept. 8-9. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NEW MEXICO:* *Examination and Reciprocity.* Santa Fe, Oct. 11-12. Sec., Dr. R. C. Derbyshire, 227 E. Palace Ave., Santa Fe.

OHIO: *Endorsement.* Columbus, Aug. 30 and Oct. 4. *Examination.* Columbus, Dec. 13-14. Sec., Dr. H. M. Platter, Wyandotte Bldg., Columbus 15.

TENNESSEE:* *Examination.* Memphis, Sept. 29-30. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis.

TEXAS:* *Examination and Reciprocity.* Fort Worth, Dec. 2-4. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

ALASKA:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Sec., Dr. Benedict Cooper, Agana.

PUERTO RICO: *Examination.* San Juan, Sept. 7-11. Sec., Dr. Joaquin Mercado Cruz, Box 9156, Santurce.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

ARKANSAS: *Examination.* Little Rock, Oct. 5-6. Sec., Dr. Louis E. Gebauer, 1002 Donaghey Bldg., Little Rock.

COLORADO: *Examination.* Denver, Sept. 8-9. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

MICHIGAN: *Examination.* Detroit and Ann Arbor, Oct. 8-9. Sec., Mrs. Anne Baker, Mason Bldg., Lansing 2.

NEBRASKA: *Examination.* Omaha, Oct. 5-6. Director, Mr. Husted K. Watson, Room 1009, State Capitol Bldg., Lincoln 9.

OKLAHOMA: *Examination.* Oklahoma City, August 27-28. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Sept. 11 and Dec. 4. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

RHODE ISLAND: *Examination.* Providence, August 31. Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

TENNESSEE: *Examination.* Memphis, Sept. 20-21. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis 3.

TEXAS: *Examination.* October. Location to be determined by the number of applications from each section of the state. Sec., Brother Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

WISCONSIN: *Examination.* Madison, Sept. 24. Milwaukee, Dec. 4. Sec., Mr. W. H. Barber, 621 Ransom St., Ripon.

*Basic Science Certificate required.

DEATHS

Van Etten, Nathan Bristol ⊕ New York City, 94th President of the American Medical Association, died in St. Barnabas Hospital for Chronic Diseases, July 23, aged 88, of bilateral bronchopneumonia. Dr. Van Etten was born in Waverly, N. Y., June 22, 1866. He received a degree in medicine from Bellevue Hospital Medical College, New York, in 1890 and had practiced in New York City since that date. In 1906 he became visiting physician and later president at the Union Hospital, and was constantly associated with that hospital. He was consulting physician at the Morrisania City Hospital, where he became medical director in 1929 and president of the staff in 1932, and at Seton Hospital and St. Barnabas Hospital for Chronic Diseases. One unit of the two unit tuberculosis hospital at Bronx Municipal Hospital Center was named in honor of Dr. Van Etten when the cornerstone was laid May 13, 1952. He began as a general practitioner with surgical training. Further postgraduate work in the United States and abroad, an unusual experience with an epidemic of typhoid fever, and experience with other infectious diseases gradually shaped his course into the field of internal medicine. His quality of leadership was shown in the fact that he had been president of the Bronx County Medical Society, the Bronx Borough Medical Society, the New York Society of Medical Jurisprudence, the Medical Alumni of New York University, the Greater New York Medical Association, the Medical Society of the State of New York, and the American Medical Association, in which Association he served also as a member of the House of Delegates in 1920 and 1923 and continuously from 1926 through 1935. Elected vice-speaker of the House of Delegates in 1933, he served in that position until elected speaker in 1935. While in the House of Delegates he was a member and frequently chairman of many reference committees. While speaker in 1936, 1937, and 1938 he earned the admiration of the delegates by his calm manner, his justice, his leadership, and his unwavering fidelity to the principles of the American Medical Association. In 1926 he was appointed to the Committee on Nurses and Nurse Education. In his inaugural address as President at the New York session in 1940, he spoke on "Better Health for America," which presentation reflected the experience of the general practitioner in a large metropolitan community. He stated: "Organized medicine has been trying for the last 94 years to inspire all its members, who represent 85% of the active practitioners in the United States, with high ideals and with a sense of their responsibility for good public service." His record as President of the Association was in keeping with his fundamental concept of a physician's duty and responsibility to public service. Dr. Van Etten was the second speaker of the House of Delegates to be honored with the presidency of the Association, a recognition of his prominence as a general practitioner and a leader in medical affairs. He was a specialist certified by the American Board of Internal Medicine, a fellow of the American College of Physicians, and an honorary member of the New York Academy of Medicine. In June, 1940, Dr. Van Etten received the honorary degree of doctor of public health from New York University College of Medicine. He was also director of the Associated Hospital Service in 1941, member of the advisory committee of the National Foundation for Infantile Paralysis in 1942, director of the United Medical Service in 1944, and president of the Bronx Tuberculosis and Health Association and director of the New York Tuberculosis and Health Association in 1945.

NATHAN BRISTOL VAN ETTEN, 1866-1954

Owen, John Paul, Rear Admiral, U. S. Navy, retired, San Francisco; born at Milford, Mo., Jan. 29, 1889; St. Louis University School of Medicine, 1913; appointed a lieutenant (j.g.) Medical Corps, U. S. N. R., in August, 1915; transferred to the U. S. Navy in that rank in April, 1917; promoted to rear admiral to rank from Sept. 17, 1942, and was placed at his own request on the retired list of officers of the Navy on May 1, 1948; following his appointment in the Medical Corps of the Naval Reserve, reported in September, 1915, for instruction at the Naval Medical School, Washington, D. C.; after a tour of duty at the Recruiting Station, New Orleans, joined the USS Louisiana, serving in that battleship during World War I; in December, 1917, ordered to duty in connection with the fitting out of the USS Ticonderoga; detailed from this ship before she was torpedoed on Sept. 30, 1918; joined the USS Prairie in 1918, when she was serving as escort vessel for submarine chasers being convoyed across the Atlantic; from 1939 to 1941 served as fleet medical officer, U. S. Asiatic Fleet; in September, 1941, ordered to duty in the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., where he served until assigned to the Naval Hospital, Quantico, Va.; transferred to the Naval Hospital, Mare Island, Calif., in November, 1942, and commanded that hospital until ordered to duty as fleet medical officer, seventh fleet; subsequently ordered to duty as district medical officer, Third Naval District, New York, and as district medical officer, Twelfth Naval District, San Francisco; for exceptionally meritorious services performed as medical officer in command of the Naval Hospital, Mare Island, Calif., from Nov. 11, 1942, to March 1, 1945, was awarded the Legion of Merit; for meritorious conduct in the performance of outstanding service as fleet medical officer, seventh fleet, was awarded a Gold Star in lieu of second Legion of Merit; died in the Naval Hospital, Oakland, Calif., June 14, aged 65.

Homans, John ⊕ Brookline, Mass.; born in Boston Sept. 2, 1877; Harvard Medical School, Boston, 1903; clinical professor of surgery emeritus at his alma mater, where he was assistant in surgery, 1910-1913, associate, 1913-1916, instructor, 1916-1928, and assistant professor, 1928 to 1934, when he became clinical professor; from 1936 to 1937 William H. Camalt professor of surgery at Yale University School of Medicine in New Haven, Conn., where he was surgeon in chief of the New Haven Hospital; at one time professor of clinical surgery at Tufts College Medical School, Boston; member of the founders group of the American Board of Surgery; an Associate Fellow of the American Medical Association; member of the American Surgical Association and the New England Surgical Society; served during World War I; author of "Textbook of Surgery"; since 1939 surgeon emeritus at the Peter Bent Brigham Hospital, Boston, where he died June 7, aged 76, of a heart attack.

⊕ Indicates Member of the American Medical Association.

Murphy, Edwin Roy ✠ Salt Lake City; born in Champaign, Ill., April 17, 1882; Rush Medical College, Chicago, 1908; associate clinical professor of pediatrics at the University of Utah School of Medicine; past president of the Salt Lake County Medical Society; specialist certified by the American Board of Pediatrics; fellow of the American Academy of Pediatrics; member of the Intermountain Pediatrics Association, which in 1952 established in recognition of his work the annual E. R. Murphy Memorial Lectureship; served during World War I; consulting pediatrician at the Shriners' Hospital for Crippled Children; died May 7, aged 72, of coronary occlusion.

Abraham, Joseph H. ✠ New York City; University of Virginia Department of Medicine, Charlottesville, 1894; specialist certified by the American Board of Otolaryngology; member of the American Laryngological, Rhinological and Otological Society and the American Ophthalmological Society; fellow of the American College of Surgeons; at one time on the faculty of the New York Polyclinic Medical School and Hospital; consulting otolaryngologist at the Hospital for Joint Diseases; died June 3, aged 83.

Badger, George Sherwin Clarke ✠ Boston; Harvard Medical School, Boston, 1897; served during World War I; at one time president of the Boston Tuberculosis Association; formerly on the faculty of his alma mater; for a short time served as school physician of the Boston public schools; for many years associated with the Massachusetts General Hospital; from 1904 to 1942 physician in chief of the New England Baptist Hospital, where he held the title of physician in chief emeritus; died April 28, aged 83, of arteriosclerotic heart disease.

Baker, Karl Edgar, Carthage, Mo.; University of Missouri School of Medicine, Columbia, 1903; served as mayor; associated with McCune-Brooks Hospital; died May 8, aged 74.

Barrett, Ralph Raymond, Huntington Park, Calif.; Eclectic Medical College, Cincinnati, 1902; died in Bell May 27, aged 79, of coronary insufficiency and hypertension.

Beck, Viola Bandy ✠ Oakland, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; died in St. Anthony's Hospital, Terre Haute, Ind., June 4, aged 79.

Blass, Henry Ernest ✠ Akron, Ohio; Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1921; member of the American Academy of Dermatology and Syphilology; served with the German Army during World War I; on the staffs of the People's and Children's hospitals; died June 19, aged 62.

Bristow, Samuel W. ✠ Albany, Ky.; University of Tennessee Medical Department, Nashville, 1906; died May 12, aged 80, of a heart attack.

Burke, George William ✠ Reno, Nevada; Tulane University of Louisiana School of Medicine, New Orleans, 1939; served during World War II; died May 31, aged 47, of carcinomatosis.

Calvary, Martin ✠ Warren, Ohio; Ludwig-Maximilians-Universität Medizinische Fakultät, München, Bavaria, Germany, 1907; on the staff of St. Joseph's Hospital; died June 13, aged 69.

Caudle, Richard Spurgeon, Lakeland, Fla.; Emory University School of Medicine, 1943; served during World War II; on the staff of the Municipal Hospital in Tampa, died in Groveland April 24, aged 36, of pulmonary tuberculosis.

Droste, James Casper ✠ Grand Rapids, Mich.; born in Grand Rapids in 1886; University of Illinois College of Medicine, Chicago, 1913; co-founder of the Ferguson-Droste-Ferguson Rectal Clinic and Hospital, where he held an active staff appointment, served on the board of trustees, and was treasurer; treasurer of the executive staff, 1944-1946, and consultant in proctology at St. Mary's Hospital; courtesy member of the staffs of Butterworth and Blodgett Memorial hospitals; died May 7, aged 67, of carcinoma of the esophagus.

Francisco, Frank Glenn ✠ Enid, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1916; served in France during World War I; affiliated with St. Mary's and Enid General hospitals; died May 13, aged 63, of carcinoma.

George, Frederick Siebert ✠ Syracuse, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1899; anesthetist at the Onondaga General Hospital, where he was treasurer of the board of trustees; died in Crouse-Irving Hospital May 16, aged 80, of bronchopneumonia, prostatic obstruction, and acute cholecystitis with secondary intestinal obstruction.

Germo, Charles, Beaumont, Calif.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1895; served in France during World War I; died May 9, aged 82, of cerebral thrombosis.

Goodwin, Oliver P., Pleasureville, Ky.; Louisville (Ky.) Medical College, 1902; died in New Castle May 15, aged 78.

Gorr, Charles J., Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1899; died June 9, aged 80, of coronary thrombosis, generalized arteriosclerosis, and carcinoma of the right lung.

Green, Simpson William ✠ Detroit; Detroit College of Medicine and Surgery, 1917; died in Sinai Hospital May 4, aged 67, of cancer.

Grubbs, Louis Frank ✠ Abilene, Texas; Atlanta College of Physicians and Surgeons, 1905; died in Orlando, Fla., May 6, aged 72, of cerebrovascular accident, heart disease, and arteriosclerosis.

Grumley, Martin Edward, Millinocket, Maine; Tufts College Medical School, Boston, 1921; died March 12, aged 62, of uremia and chronic nephritis.

Hamilton, Howard Albert, Lebanon, Mo.; University of Kansas School of Medicine, Kansas City, 1906; died in the State Hospital No. 1, Fulton, April 29, aged 75.

Hix, Lafayette C., Lafayette, Tenn.; University of Tennessee Medical Department, Nashville, 1904; died April 6, aged 76, of cancer.

Hofmeister, Rudolph ✠ St. Louis; St. Louis University School of Medicine, 1919; died in the Lutheran Hospital April 29, aged 67, of cerebral thrombosis.

Hurtt, Harry ✠ Still Pond, Md.; University of Maryland School of Medicine, Baltimore, 1895; member of the Medical Society of the District of Columbia; died June 25, aged 81.

James, Chester Eugene, Massillon, Ohio; University of Wooster Medical Department, Cleveland, 1903; died in the Massillon City Hospital April 22, aged 85.

Jernigan, Virgil Jackson ✠ Longmont, Colo.; Vanderbilt University School of Medicine, Nashville, 1900; died May 10, aged 85, of cerebral thrombosis and hypertension.

Johnston, James F. ✠ Colonel, U. S. Army, retired, Asheville, N. C.; Birmingham Medical College, 1909; entered the U. S. Army on March 28, 1911; promoted to colonel Feb. 23, 1937; retired Feb. 28, 1938; died April 29, aged 70.

Kepes, Martin Alexander ✠ White Plains, N. Y.; Magyar Királyi Erzsébet Tudományegyetem Orvostudományi, Pecs, Hungary, 1933; Westchester County Deputy Health Commissioner; died May 27, aged 45.

Kistler, C. Harold Jr. ✠ Alpine, Calif.; Hahnemann Medical College and Hospital of Philadelphia, 1945; member of the Medical Society of the State of Pennsylvania; served during World War II; formerly on the staff of the Hahnemann Hospital in Philadelphia and the Bryn Mawr (Pa.) Hospital; died in San Diego May 23, aged 33, of bacterial endocarditis following tooth extraction.

Kittredge, Herman Eugene, Clinton, Md.; Columbian University Medical Department, Washington, D. C., 1901; served on the staff of St. Elizabeth's Hospital in Washington, D. C.; died June 24, aged 82.

Klow, Sidney Deutsch, Memphis, Tenn.; University of Illinois College of Medicine, Chicago, 1934; on the faculty of the University of Tennessee College of Medicine; member of the American Psychiatric Association; specialist certified by the American Board of Psychiatry and Neurology; served during

World War II; chief, neuropsychiatric service, Kennedy Veterans Administration Hospital; died in the Veterans Administration Medical Teaching Group Hospital May 24, aged 45, of myocardial infarction.

Kraaymes, Henry John Louis ⊕ Oakland, Calif.; Rijks-Universiteit te Leiden Faculteit der Geneeskunde, Netherlands, 1935; died Feb. 6, aged 54, of coronary sclerosis.

McCurry, Daniel Kirtland, Green Forest, Ark.; University of Arkansas School of Medicine, Little Rock, 1904; died in the Baptist Hospital, Springfield, Mo., May 16, aged 74, of coronary thrombosis with myocardial infarction.

McMichael, Robert Martin ⊕ Muncie, Ind.; Western Reserve University School of Medicine, Cleveland, 1931; specialist certified by the American Board of Obstetrics and Gynecology; served during World War II; on the staff of the Ball Memorial Hospital; died in the Lakeside Hospital, Cleveland, May 19, aged 48, of coronary thrombosis.

Mauger, Lee Fillman, Pottstown, Pa.; Jefferson Medical College of Philadelphia, 1913; also a graduate in pharmacy; served during World War I; for many years consultant at the Wills Eye Hospital in Philadelphia, where he was on the staff from 1922 to 1924; died May 12, aged 66.

Meisburger, Richard Gordon ⊕ Kansas City, Kan.; University of Kansas School of Medicine, Kansas City, 1940; lecturer at Kansas City University School of Dentistry; served during World War II; member of the staff of Bethany Hospital, where he died May 26, aged 44, of coronary thrombosis.

Muellenhagen, Walter J. ⊕ Detroit; Detroit College of Medicine and Surgery, 1917; died May 9, aged 61, of cardiac decompensation and posterior cardiac infarction.

Mull, Philip Lee ⊕ Pekin, Ind.; Kentucky School of Medicine, Louisville, 1898; an Associate Fellow of the American Medical Association; formerly dean and professor of anatomy at the University of Mississippi School of Medicine in University; at one time professor of anatomy at the University of Louisville (Ky.) School of Medicine; died June 10, aged 81.

Nelligan, John Patrick ⊕ Cambridge, Mass.; Harvard Medical School, Boston, 1902; past president of the Cambridge Medical Improvement Society; for many years school physician; died May 29, aged 76, of glioblastoma.

Phillips, John Henry ⊕ Granite City, Ill.; St. Louis University School of Medicine, 1923; died in the Barnes Hospital, St. Louis, June 10, aged 58, of acute myocardial infarction.

Phillips, Thomas Henry ⊕ Rockwood, Tenn.; Vanderbilt University School of Medicine, Nashville, Tenn., 1905; served as mayor; on the staff of Chamberlain Memorial Hospital; died May 21, aged 72, of cardiovascular disease.

Raulston, Joe L., Richard City, Tenn.; Chattanooga Medical College, 1901; died in the Memorial Hospital, Knoxville, April 15, aged 76, of cerebral hemorrhage.

Richards, Ralph Taylor ⊕ Salt Lake City; University and Bellevue Hospital Medical College, New York, 1903; clinical professor of surgery emeritus at the University of Utah School of Medicine; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; on the staff of the Dr. W. H. Groves Latter-Day Saints Hospital; died June 12, aged 73.

Rooney, Henry Michael ⊕ Los Angeles; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; specialist certified by the American Board of Obstetrics and Gynecology; past president of the Los Angeles Obstetrical Society; chief of the department of obstetrics and gynecology at St. Vincent's Hospital, where he died June 6, aged 75, of cerebral hemorrhage.

Shaw, Farnham H. ⊕ Wellsboro, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; on the staff of the Soldiers & Sailors Memorial Hospital; died April 17, aged 79, of hypertensive cardiovascular disease.

Smith, Gerald Stanley ⊕ Lubbock, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1936; served during World War II; affiliated with Lubbock Memorial Hospital; died April 8, aged 42, of a heart attack.

Smith, James Scranton, Allentown, Pa.; Jefferson Medical College of Philadelphia, 1895; died in the Allentown Hospital March 31, aged 84, of arteriosclerotic heart disease.

Stoeckmann, Arthur Edward ⊕ St. Peter, Minn.; University of Minnesota Medical School, Minneapolis, 1928; on the staff of St. Peter State Hospital; died in the Community Hospital April 30, aged 52, of coronary thrombosis and diabetes mellitus.

Torpey, James F., Elma, Iowa; Barnes Medical College, St. Louis, 1898; died April 19, aged 87, of cardiovascular disease.

Touchton, Walton Clemmons, Avon Park, Fla.; Atlanta Medical College, 1914; member of the Industrial Medical Association; died April 9, aged 67, of coronary arteriosclerosis.

Trammell, James Ross, Statham, Ga.; University of Arkansas School of Medicine, Little Rock, 1918; died in Athens, May 22, aged 69, of chronic nephritis and uremia.

Van Noort, Francis Joseph, Paterson, N. J.; Cornell University Medical College, New York, 1899; died May 26, aged 84.

Venable, Douglas Randolph ⊕ Columbus, Ga.; University of Texas School of Medicine, Galveston, 1916; specialist certified by the American Board of Pathology; member of the College of American Pathologists and the American Society of Clinical Pathologists; served during World War I; on the staff of St. Francis Hospital, where he died May 27, aged 61, of myocardial infarction.

Wakefield, Katharine, Connellsville, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1894; died March 29, aged 92, of arteriosclerotic heart disease.

Weir, Matt Blakely ⊕ Atlantic, Iowa; State University of Iowa College of Medicine, Iowa City, 1905; served as mayor of Griswold, where for six years he was president of the school board; died in the Jennie Edmundson Hospital in Council Bluffs, May 23, aged 71.

Wellenreiter, Otto Francis ⊕ Danville, Ill.; Georgetown University School of Medicine, Washington, D. C., 1901; also a graduate in pharmacy; an Associate Fellow of the American Medical Association; on the staff of St. Elizabeth Hospital and the Lake View Hospital, where he died June 14, aged 80, of incarcerated inguinal hernia and cerebral hemorrhage.

Wellman, Waldron William, Holly, Mich.; University of Michigan Medical School, Ann Arbor, 1930; died May 23, aged 49, of coronary occlusion.

Whynman, Boris ⊕ New York City; University and Bellevue Hospital Medical College, New York, 1899; died in the Manhattan General Hospital Feb. 19, aged 84, of heart failure.

Wilkins, Charles Abercrombie, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1902; affiliated with Georgia Baptist and Grady hospitals and St. Joseph's Infirmary, where he died May 23, aged 74, of encephalomalacia and cerebral thrombosis.

Williams, Andrew Davis, Lawrenceville, Ga.; Hospital Medical College, Eclectic, Atlanta, 1909; died April 4, aged 69, of bronchopneumonia.

Wilson, Henry M., Huntington, Texas (licensed in Texas under the Act of 1907); affiliated with Angelina County and Memorial hospitals in Lufkin; died May 18, aged 78, of acute coronary insufficiency.

Wilson, James Samuel, Johnson, Neb.; State University of Iowa College of Medicine, Iowa City, 1896; died in Lincoln June 29, aged 81, of carcinoma of the prostate.

Wolfe, Joseph Herbert ⊕ Iowa City, Iowa; Starling Ohio Medical College, Columbus, 1910; served during World War I; on the staff of the Mercy Hospital, where he died June 12, aged 71, of aortic aneurysm.

Worthy, William ⊕ Boston; College of Physicians and Surgeons, Boston, 1908; died in Peter Bent Brigham Hospital May 20, aged 76, of coronary heart disease.

Wurzer, Arnold Henry ⊕ St. Louis; St. Louis University School of Medicine, 1928; on the courtesy staff, St. Mary's Hospital, where he died May 21, aged 55, of ruptured aortic aneurysm.

FOREIGN LETTERS

BRAZIL

Epidemic of Leishmaniasis.—At a meeting of the Associação Paulista de Medicina, Dr. Samuel B. Pessoa of São Paulo reported a recent epidemic of kala-azar in the northern part of the state of Ceará, in the equatorial zone. Dr. Pessoa examined 52 patients, mainly from rural sections of Sobral county. The clinical findings were largely uniform; in general, the disease affected children, who showed a continuous temperature (100 to 102 F), with morning remission, anemia, marked splenomegaly, occasional hepatomegaly, and diarrhea or constipation. Some of the children were being treated with glucantime (Rhodia), and a few were almost cured. Others had not been treated. Smears of material from bone marrow and spleen revealed Leishmania donovani. With mixed serum from five patients, the formaldehyde (Formol) gel and the distilled water tests were performed with strongly positive results, gelling and clouding appearing after only a few minutes. Dr. Pessoa caught an adult Phlebotomus longipalpis on the wall of a room in the local hospital and several other sandflies of the same species in different parts of the city. A technician of the malaria division of the National Department of Health had previously caught about 50 of these flies known to be the vector of kala-azar in northern Brazil. Of 37 patients previously studied by Dr. Aragão of the Sobral county health unit, 25 were aged 4 years or less, 8 were 5 to 10, and only 4 were 11 or over. Most of the patients had contracted the disease in Sobral county. According to Dr. Aragão, the first cases of kala-azar in this region occurred four years ago.

Extermination of Scorpions.—Belo Horizonte, the capital of Minas Gerais, was plagued, until very recently, by venomous scorpions that each year stung about 1,000 persons and caused about five deaths, the latter mainly in young children. A campaign against these arachnids, carried out by the malaria division of the National Department of Health, began in October, 1951. In a paper soon to be published in *Revista brasileira de malariologia*, Drs. Jefferson C. Souza, Fernando M. Bustamante, and José C. Bicalho will report the results of the work accomplished until Dec. 31, 1953, with the use of benzene hexachloride (BHC or Gammexane). Using 2,135,218 liters of emulsion or suspension of benzene hexachloride at the rate of 500 mg. per square meter, 79,835 houses and about 80,000 back yards and vacant lots were sprayed in the first phase of the campaign. In buildings of more than three stories, as a rule, only ground and the second floors were sprayed. After the fifth month of the work, the number of stings began to diminish; during the last half of 1952, only 79 were reported; and in 1953, only 46 were reported for the year. With this sharp decline in the number of stings, deaths from this cause disappeared completely.

Thirty Years of Activity of a Maternity Hospital.—The Pro-Matre Hospital of Rio de Janeiro is a private maternity hospital that admits pregnant women of low social status in emergency conditions. It receives many women in bad condition, most of whom have had no prenatal care. In *Revista de gynecologia e d'obstetricia* (**48**:4, 1954), Dr. J. Moniz de Aragão reported the progress in maternal care made in the 30 years (1923 to 1953) of the hospital's existence. A total of 41,839 deliveries were performed. These resulted in 39,508 live births and 2,331 stillbirths, with 648 maternal deaths and 1,030 neonatal deaths. Dividing the 30 years into six five year periods, the following coefficients of fetal mortality per 1,000 total births were determined: 82, 77.6, 63, 57.1, 52.3, and 37. Although these are undoubtedly high, they show a significant reduction. The corresponding coefficients of maternal mortality per 1,000 live births were 41.9, 35.8, 30.8, 15.8, 8.1, and 3.4. Puerperal infection was the main cause of maternal deaths, and such infection can now be well controlled by antibiotics. The coefficient of mortality from puerperal infection declined from 6.2 per 1,000 live births in 1943 to 0.6 in 1952.

Cutaneous and Visceral Leishmaniasis.—In *O Hospital* (**54**:419, 1954) Drs. L. M. Deane and M. P. Deane of São Paulo reported cutaneous and visceral leishmaniasis (kala-azar) in two of four foxes caught by them near Sobral county in Ceará. This animal, Lycalopex vetulus Lund, is slightly different from the fox of temperate climates. The diseased animals were emaciated and sluggish and had dull fur but no edema, loss of hair, or cutaneous ulcerations. The skin of the snout was abnormally brittle. Leishmanias were found in the liver but not in the blood stream. One animal was killed, and smears were made from blood, spleen, liver, lymphatic glands, and skin. The smears revealed the presence of extracellular and intracellular leishmanias in the liver and spleen, even larger numbers in the bone marrow, and great numbers in the skin of the snout.

ENGLAND

Anniversary of Penicillin.—A presentation was made on June 29 at St. Mary's Hospital Medical School, London, to Sir Alexander Fleming of a pair of silver George III sauce tureens to mark the 25th anniversary of the report of his discovery of penicillin. The presentation was made by the Duke of Edinburgh on behalf of the medical school with which Sir Alexander has long been associated. In return, the Duke accepted from Sir Alexander a medallion in which was mounted a specimen culture of the original mold from which penicillin was developed. He has also presented one to the Queen Mother. In a speech after the presentation, Sir Alexander Fleming said that he would never cease to wonder that a minute spore, half the size of a blood corpuscle, which settled on one of his culture plates 26 years ago, had resulted in the creation of a large industry employing thousands of people all over the world. Formerly so scarce that it was given only in urgent situations, penicillin is now so cheap and plentiful that it is used for fattening hogs and poultry. Sir Alexander paid tribute to his old teacher, Sir Almroth Wright the famous immunologist. "I was the lucky one chosen to notice the happening that eventually led to penicillin, but would I have ever noticed it but for my previous work in association with my master, Sir Almroth Wright? When the first war came we worked in Boulogne and saw thousands of septic wounds for which we could do little. The work then done in Wright's laboratory in Boulogne and in the inoculation department of St. Mary's Hospital was good work in which I am proud to have taken part." On a former occasion, Sir Alexander said that the chance that put the mold in the right spot at the right time was like winning the Irish sweepstakes.

Aldosterone.—A new suprarenal steroid, electrocortin, discovered simultaneously by workers at Middlesex Hospital, London, and Reichstein and his co-workers at Basle, Switzerland (*Experientia* **9**:33, 1953), has now been found to be closely related to corticosterone, differing from it in having an aldehyde group on carbon atom 18 (*Experientia* **10**:132, 1954). For this reason it has been renamed aldosterone. It increases the sodium retention and potassium excretion of the kidney. Cope and Gracia-Llaurado of Hammersmith (*Brit. Med. J.* **1**:1311, 1954), have recently reported the presence of a substance causing sodium retention in normal human urine. They observed an increased amount of this in the urine of patients suffering from congestive heart failure, nephrosis, and hepatic cirrhosis with ascites. They believe that this substance is aldosterone, as its rate of flow on paper chromatograms is the same as that of this compound. So far detailed investigation of the physiological

The items in these letters are contributed by regular correspondents in the various foreign countries.

activity of aldosterone has been difficult owing to the very small amounts that have been extracted from the adrenals. Judged by the dosage needed to maintain the life of dogs that have had adrenalectomy, aldosterone is 25 to 30 times as active as desoxycorticosterone. Mach and his colleagues in Switzerland (*Schweiz. med. Wchnschr.* **84:**407, 1954) have given aldosterone to patients with adrenal cortical hypofunction (Addison's disease) and confirm this figure in man. Like desoxycorticosterone, it caused sodium and chloride retention and increased potassium excretion. Unlike desoxycorticosterone, it converts hypoglycemic glucose tolerance curves to normal.

Treatment of Bone and Joint Tuberculosis.—A trial was carried out by Griffiths and co-workers at the Robert Jones and Agnes Hunt Orthopedic Hospital, Oswestry, on the use of isoniazid in the treatment of bone and joint tuberculosis (*Brit. Med. J.* **1:**1355, 1954). Previous reports stated that it is very effective in the pulmonary form of the disease, particularly when used in combination with streptomycin or *p*-aminosalicylic acid. Griffiths and his co-workers gave isoniazid alone in doses of 5 mg. per kilogram of body weight per day for about six months to 20 patients with early uncomplicated tuberculous bone and joint lesions. The weight, sedimentation rate, changes in roentgenologic appearances, and presence of abscesses or sinuses were carefully recorded before and at the end of treatment. No other drugs were given. The authors concluded that over the six month period isoniazid contributed little to the improvement of the lesions. Although there was an improvement in general health and a gain in weight, the effect on the tuberculous lesions was no better than would be expected without the use of any drugs. It was not considered justifiable to further withhold the benefits of streptomycin from these patients.

Death from Bovine Corticotrophin.—Although untoward reactions to corticotrophin are comparatively common, death following its use is extremely rare. A fatal case has been recorded by Hill and Swinburn of the Napier Hospital, New Zealand (*Lancet* **1:**1218, 1954). A 27-year-old man was given a course of therapy with corticotrophin derived from the pig for the treatment of an exudative dermatitis. The drug was well tolerated, and the skin condition improved. An injection of corticotrophin of bovine origin was subsequently given, and within 15 minutes the patient became prostrate, and a rigor, weak pulse, and loss of consciousness occurred. He recovered, but about nine months later another injection of corticotrophin of bovine origin was given. The patient became unconscious, peripheral circulatory failure lasted for nearly 30 minutes, and death resulted from prolonged cerebral anoxia from anaphylactic shock. This was confirmed at autopsy.

Amino Aciduria in Pernicious Anemia.—Preliminary observations by Weaver and Neill of the Royal Victoria Hospital, Belfast, indicate that patients with untreated pernicious anemia and combined system disease (subacute combined degeneration) excrete abnormal amounts of taurine in the urine (*Lancet* **1:**1212, 1954). Sometimes there is also increased secretion of lysine, cystine, and leucine. After the administration of either vitamin B_{12} or liver extract, the excretion pattern of amino acids in the urine reverts to normal. It is suggested that combined system disease, which can occur without any evidence of pernicious anemia, can be diagnosed in its early stages, when neurological symptoms may be equivocal, from the presence of achylia gastrica and the urinary excretion of abnormal quantities of taurine. The latter can be detected chromatographically.

Nursing Mothers.—At a recent meeting of the Manchester Medical Society, Dr. Charlotte Naish regretted that woman, unlike the cow, had not been bred for her good milking powers. The children of mothers poor in milk were kept alive in the past by wet nurses and later by artificial feeding with milk or milk products from the cow. She estimated that 15% of women were very poor in milk, 25% were fair, and only 60% really adequate. They should be taught complementary feeding. It has been said that this takes too much time, but it is only a matter of the right technique. Test weighing of babies is unnecessary; the baby's appetite is the best guide.

FRANCE

Treatment of Toxicomania.—R. Lecoq and his co-workers observed that the repeated oral, subcutaneous, or intraperitoneal introduction of caffeine, alcohol, cocaine, morphine, or nicotine into animals produces an excitation with lowering of the chronaxy, but the intravenous introduction of the same substances if not repeated frequently produces no intoxication. On the contrary, the nervous disorders disappear when this method of administration is used. The authors have, therefore, treated various toxicomanias by this method (*Gazette of Hospital*, March 31, 1954). Another method of treating morphine addiction consists of injecting decreasing doses of morphine, diluted in glucosic serum. The results have been satisfactory especially in patients who have not already used this method of introducing the drug. For alcoholism, they inject alcohol of 25 degrees in glucosic serum (Curethyl A) in decreasing doses of 200 to 50 cc. per day with vitamins intravenously, or in some patients nicotamide adenine (Curethyl B) and the vitamin B complex. For chronic nicotine intoxication, they use a tobacco extract called Anico. This product is not yet available commercially. Patients intoxicated by caffeine are treated by the intravenous injections of caffeine at a maximal dose of 20 mg. per day. The authors emphasize the psychosomatic aspect of toxicomania and the necessity for continued psychiatric treatment after the acute stage has subsided.

Experimental Intracardiac Surgery.—Professor Lian and his co-workers have used a new mixture consisting of Hydergine (contains methanesulfonates of dihydrogenated ergotoxine alkaloids), Phenergan (10-[2-dimethylamino-1-propyl] phenothiazine), and meperidine (Dolosal) to induce artificial hibernation in dogs preparatory to experimental intracardiac operation. Anesthesia is induced with 10 mg. of pentobarbital per kilogram of body weight. The animal is then given 25 mg. of meperidine, 12.5 mg. of Phenergan, and 0.3 mg. of Hydergine followed by a slow intravenous perfusion of 25 cc. of isotonic sodium chloride solution with 50 mg. of meperidine, 25 mg. of Phenergan, 0.9 mg. of Hydergine, and 100 mg. of vitamin B_1 given over a period of 90 minutes. The body temperature drops to 35 C (95 F) and the dog is given oxygen. A subpericardial injection of a mixture of Hydergine and Phenergan is given and the Keith and Flack nodule is infiltrated with a 1% solution of lidocaine (Lignocaine) hydrochloride until cardiac pause occurs. The authors have been thus able to obtain a complete circulatory inertia lasting 15 minutes and to perform ventriculotomy without ventricular fibrillation.

Alcoholism.—Dr. May has studied the consequences of acute and chronic alcoholism and reported his findings to the Economic State Council. Of 340 patients with accidental injury, 48% had a blood alcohol level of over 0.5 gm. per liter and 20% had more than 1 gm. per liter. According to Rouvillois and Derobert, circulatory failure may occur in patients with a blood alcohol level of more than 1 gm. per liter. In patients with chronic alcoholism, however, death is usually due to hepatic cirrhosis. The increase in alcoholic psychosis is indicated by the fact that of 14,250 patients admitted to psychiatric hospitals in 1950, 3,648 were admitted for this cause and in 1951 the corresponding number was 6,222. Of 915 children examined at the psychiatric centers, 410 had alcoholic parents. In 1950 the direct cost of alcoholism to the country was about 132 billion francs, while the treasury revenues from alcoholic beverages was only 53 billion francs. There was, therefore, a loss to the country of nearly 80 billion francs. The loss of productivity caused by alcohol is estimated at about 325 billion francs a year.

J. le Rebouillet and his co-workers reported at a meeting of the Medical Society of Paris Hospitals in May that certain patients who had been treated for alcoholism continued to have serious psychological disorders, although blood tests proved that they had abstained from alcohol. These disorders may have antedated and may even have caused the alcoholism. In most cases they are the result of cerebral atrophy. R. Pluvinage has studied the electroencephalograms of patients with chronic alcoholism and various persisting psychological dis-

orders and has demonstrated conclusive evidence of cerebral atrophy that is chiefly periventricular but may be cortical. He has emphasized the relative frequency of these lesions. These psychological disorders can be differentiated from the alcoholic confusional state only after the alcoholism is cured. The authors advise early treatment of the alcoholism in any case in order to prevent the development of irreversible lesions.

NORWAY

Cerebral Palsy Census.—A report by Dr. Bjarne Andersen on a recent survey of the incidence of cerebral palsy among persons under the age of 21 deals primarily with the county of Østfold with a population in 1950 of 185,000. From this local survey and other sources of information, an attempt is made to calculate the incidence of cerebral palsy in the whole of Norway. As with similar surveys, it was found that the discovery of such cases depended largely on the thoroughness with which they were sought, for many were not to be found in the official reports of physicians and institutions. Thus, while 56 cases were discovered in official reports, 21 were discovered by other means. Applying the findings in Østfold County to the whole of Norway, Andersen calculated that the total number of cases in Norway must be about 7,600, and of these 2,300 would be in persons under the age of 21 years. With an average duration of life of 65 years, the prevalence of this condition would be 234 cases per 100,000 inhabitants. The usefulness of this report, published in full in *The Journal of the Oslo City Hospitals,* vol. 4, no. 5-6, 1954, is enhanced by the data collected from other countries. These data show how enormously the incidence of cerebral palsy varies in different parts of the world. In the United States the incidence of this condition per 1,000 births is about 5. The corresponding figure for England is only one; for Denmark it is 1.5; for Sweden it is 0.6; and for Norway, according to the present investigation, it is 1.9. Andersen suggests that these national differences may possibly be real, but they may also reflect a lack of uniformity in the method of case reporting. His classification of the various forms of cerebral palsy shows how many different varieties are now recognized since Little described it in 1862. At present athetosis alone may be divided into 12 subgroups according to the manifestations of the disease and its cause.

Hydrocortisone Ointment for Dermatoses.—At the Ullevaal Hospital in Oslo, hydrocortisone ointment has been given since November, 1953, for various forms of eczema, which in most cases was refractory to other measures. By March 15, 1954, 81 patients had been treated. In *Tidsskrift for den norske laegeforening* for June 15, 1954, Dr. Egil Paulsen and Dr. Birger Loland have reported their experiences in this field. The 1% ointment they used was prepared in the hospital by crushing hydrocortisone tablets and incorporating them in a colorless and odorless ointment that could be applied to the skin without a covering bandage. The ointment was applied twice a day and rubbed lightly into the skin. Only in a few cases was the treatment checked or controlled by unilateral applications. In many cases, the reaction was astonishingly prompt, occurring within a few hours or a day or two. Whether the eczema was acutely vehicular or comparatively dry and chronic, the improvement consisted of cessation of secretion and diminution of itching and rubor. Desquamation was often a prominent feature. While the early improvement was remarkable, the permanency of the cures must for the present remain in doubt. Several patients have already had relapses, but even if the effect of hydrocortisone is not curative, but consists only of suppressing the itching and weeping, it may yet contribute to cure of the disease by breaking the circle that has sustained it. As the application of hydrocortisone ointment is easy, many patients who have hitherto required hospital treatment can now be treated under outpatient conditions. This should be a great advantage for the patients whose pruriginous eczema is often a source of prolonged trouble in the winter. In the 81 patients in this study the results were very good in 50 and good in 18. In nine there was no effect, and in four the disease became worse.

Gade's Institute.—The staff of Dr. F. G. Gade's Pathologisk-Anatomiske Laboratorium i Bergen deals with the routine work of a pathological laboratory serving a large part of Norway and also engaged in research reported on from time to time in Norwegian and foreign journals. These articles have now been reissued in one volume (*Meddelelser,* 1953) that gives a fair impression of the quality and quantity of the work of this institute in the course of a year. It was found that the hemagglutination test gives better and more specific reactions than streptococcic agglutination in patients with rheumatic fever. A distinct correlation was found between the number of elevated titers on the one hand and the duration and severity of the disease on the other. In the chronic stage of rheumatic fever, the streptococcic agglutination was more frequently positive than the hemagglutination test, whereas in rheumatoid arthritis the two tests were equally positive. This indicates a difference in the antibody formation in the two diseases.

PERU

Fight Against Cancer in Peru.—The Peruvian government has recently reorganized the National Institute of Neoplastic Diseases. Its services are free to all who need them. Its aims are (1) the early diagnosis of cancer through the examination of apparently healthy persons in the Cancer Detection Center, (2) the early treatment of cancer by the most modern methods, and (3) the training of young physicians in oncology. At present 24 physicians are being so trained. This educational program will be enlarged so that physicians may be trained not only in the field of cancer but also in roentgenologic diagnosis and treatment and in pathology.

Under the reorganization the institute consists of 12 departments dealing with (1) tumors of the head and neck; (2) tumors of the breast, bones, and mixed tumors; (3) tumors of the chest; (4) tumors of the abdomen; (5) tumors of the female genital organs; (6) tumors of the urinary and male genital organs; (7) general medicine; (8) neurological surgery; (9) pathology; (10) roentgenologic diagnosis; (11) roentgenotherapy; and (12) anesthesiology. The medical personnel of the institute consists of a resident staff (interns and residents) and a nonresident staff (chiefs and assistant chiefs of departments). With the new organization, the number of patients seen in the institute has greatly increased. Previously, about 2,000 patients per year were admitted, but last year 7,000 were examined. The number of consultations increased from 12,000 per year before 1953 to 42,000 in 1953. The number of patients treated with radiotherapy increased from 600 in 1952 to 2,000 in 1953. Research is an important part of the educational program of the institute. Adrenalectomies and hypophysectomies have been performed in patients with advanced carcinoma of the breast in the past year. The effect on advanced cancers of several chemical agents is also being studied. Special studies on serum electrolytes have been undertaken.

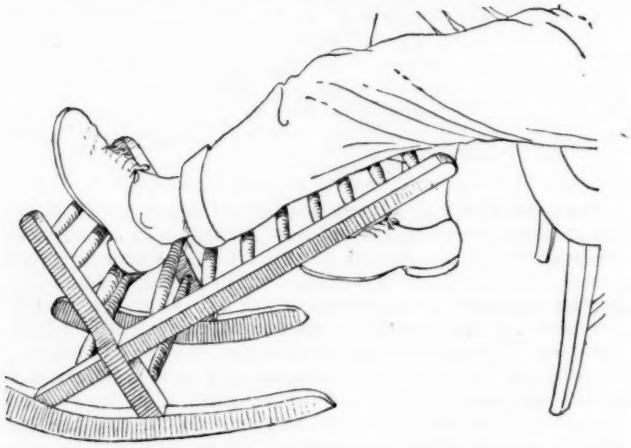
Symposium on Cancer of the Uterine Cervix.—At the Clinica Lozada of Lima on June 10, Dr. J. C. R. de Castro speaking of hyperplasia, metaplasia, and carcinoma in situ of the uterine cervix stated that squamous metaplasia of the endocervical epithelium should be considered precancerous, because it frequently (but not always) undergoes malignant change. The cervical basal cell hyperplasia seen in some pregnant women must be differentiated from true carcinoma in situ and not considered precancerous, because this condition is generally transient. In such cases reexamination after delivery to confirm the diagnosis is advised. He reported on a patient who has had carcinoma in situ of the uterine cervix since 1948 and is still living.

Dr. L. H. Gil speaking of roentgenotherapy in the treatment of cervical cancer stated that the delay of the patient in seeking medical aid is an important cause of the failure of irradiation therapy. Of 2,252 women examined by him from 1939 to 1949, only 5% had a cancer of grade 1 when first seen; in 25% the cancer was grade 2; and in 70% it was grade 3 or 4. Dr. Mariano Bedoya said that every cervical cancer, no matter how advanced, is operable and should be operated. Of 15 women with cancers of grade 1 and 2 on whom he performed a total hysterectomy, 12 are alive and in good health.

CORRESPONDENCE

GOUT ROCKER

To the Editor:—About 25 years ago, Dr. Irving F. Stein brought to my attention an item that he brought back from Lake Lure, N. C. He referred to it as a gout rocker, as did I in my book "The Foot and Ankle" (Philadelphia, Lea & Febiger, 1940). It is helpful in the prevention and relief of certain conditions. I have used it on patients with arthritis, neuritis, herniation of the intervertebral disk, and swollen legs. It provides mechanical, physiological, and circulatory aid. One advantage of the rocker lies in the fact that the base of the leg rest is an arc instead of a flat surface (see figure). Another advantage is that the rocker supplies dynamics instead of statics. It helps the local circulation; reduces fatigue and tension; is a resilient support; encourages movement; produces oscillation; and, in short, relaxes the lower extremity. It makes any chair as comfortable as a deck chair on an ocean liner. It is a boon to tired legs, backs, and feet because it relieves mental and physical fatigue. It enables the patient to rock his legs back to comfort. It is good for many types of persons, from executives to housewives. It is an aid to tired muscles and to overworked ligaments, nerves, bones, and joints. It is good for normal persons past 40 years of age and for tired persons past 60. As Sir Arthur Keith has said, muscles are the beginning and end of many orthopedic conditions.



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COLIFORM SEROTYPES

To the Editor:—Coli serotypes associated with epidemic infantile gastroenteritis have been reported from countries in moderate and subtropical regions of the world—the United States, western Europe, Japan, and Israel. To our knowledge no reports of their isolation in tropical countries have been made; therefore, we thought it worth while to call your attention to the possibility of isolating these serotypes in the tropics, where, in many cases of gastroenteritis and vomiting in infants, no causative agent can be found. In at least one case of infantile gastroenteritis, Escherichia coli 0111-B4 was recently found in this country. The typing of this organism was confirmed by Dr. W. H. Ewing (U. S. Communicable Disease Center, Chamblee, Ga.). Other strains of this serotype and of serotype 055-B5 have been isolated and are being studied.

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ESOPHAGEAL VARICES AND LIVER CIRRHOSIS

To the Editor:—The article by Brick and Palmer "Esophageal Varices and Vascular Spiders (Nevi Araneosi) in Cirrhosis of the Liver" (*J. A. M. A.* **155:8** [May 1] 1954) was read with interest. I would like to add a larger clinical series and a smaller biopsy series to their observations. This group of patients comprises more than 700 with liver disease studied at the Veterans Administration Hospital, Hines, Ill., in association with Dr. L. A. Baker. Of these, 319 patients were studied consecutively by esophagoscopy. They all fulfill clinical criteria for Laennec's cirrhosis; alcoholism and three or more of the following: hepatomegaly, persistently abnormal liver function tests, prolonged reversal of albumin-globulin ratio, ascites, splenomegaly, varices, and/or positive biopsy. Sixty-five patients underwent biopsy studies. For comparison, the figures of Brick and Palmer are given first.

1. Esophagoscopic and clinical findings in 150 cases of cirrhosis (Brick and Palmer):

	95 Patients With Varices	55 Patients Without Varices
Hepatomegaly	70 (71.5%)	49 (89.0%)
Ascites	30 (31.5%)	12 (21.8%)
Vascular spiders	59 (62.1%)	16 (29.1%)
Splenomegaly	33 (34.7%)	11 (20.0%)

2. Incidence of factors in 319 patients with cirrhosis (Baker and Bennett):

	99 Patients With Varices	220 Patients Without Varices
Hepatomegaly	95 (96.0%)	216 (98%)
Ascites	54 (54.5%)	74 (33%)
Vascular spiders	72 (73.0%)	119 (54%)
Splenomegaly	65 (66.0%)	71 (32%)

3. Incidence of factors in 65 patients with cirrhosis who underwent biopsy (Baker and Bennett):

	29 Patients With Varices	36 Patients Without Varices
Hepatomegaly	27 (93%)	35 (97%)
Ascites	13 (45%)	10 (28%)
Vascular spiders	23 (79%)	15 (42%)
Splenomegaly	19 (65%)	15 (42%)

4. Collateral abdominal circulation representing the results of our study of collateral abdominal circulation in these groups (Baker and Bennett):

	Varices	No Varices
Total group	47 (47%)	68 (29%)
Biopsy group	8 (27%)	10 (28%)

It can be seen that, while varices of the esophagus and vascular nevi coincided in 73% of the cases diagnosed clinically and 79% of cases proved by biopsy, they also were present in 54% and 42% of cases without varices, respectively. Ascites, while it was present in fewer cases, actually gave a better differential in our series (54.5% versus 33%). Unfortunately, collateral abdominal circulation gives no real indication of being more reliable in predicting varices of the esophagus. While varices were present in 63% of Brick and Palmer's patients, they were present in only 45% of our patients.

I agree with Drs. Brick and Palmer that at present there is no substitute for esophagoscopy in the search for varices, although well-performed roentgen studies with special technique offer a good screening method. I doubt that the presence or absence of nevi is of much more than statistical significance, as they were present in two out of four patients without varices and in only three out of four with varices.

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BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Malpractice: Surgeon's Liability for Negligence of Anesthetist.—The plaintiff sued for damages for the death of his 8-year-old daughter, alleged to have been caused by the negligence of the defendant physician. The original suit joined as defendants the nurse anesthetist and the Mountain Sanitarium, but they were dismissed by the trial judge. The case was tried twice, and on the second trial the jury found in favor of the defendant physician. From this finding, the plaintiff appealed to the Supreme Court of North Carolina.

Among other things, the plaintiff challenged the correctness of certain instructions that the trial court gave to the jury. Among these instructions was the statement, "If there were negligence on the part of Hanson [the anesthetist] or on the part of any one or more of the nurses, which is denied by the defendant, Dr. T. H. Joyner, in such case the defendant, Dr. T. H. Joyner, would not be responsible for their negligence. The issue for decision is whether the defendant, Dr. T. H. Joyner, was negligent and whether such negligence on his part was the proximate cause or one of the proximate causes of the death of Judith Lane Jackson." These instructions in effect withdrew from the jury the question of negligence of the defendant based on the conduct of the nurse anesthetist.

The record discloses that the child's mother, in arranging for the operation, contacted and engaged only Dr. Joyner. He, in turn, after demurring to the mother's suggestion that her family physician be engaged to give the anesthetic, arranged for the help and assistance of the nurses, including the nurse Hanson, who administered the anesthetic. The evidence is sufficient to justify the inference that during the time the child was being prepared for the operation and while the operation was in progress the defendant, as surgeon in charge, had full power of control over the nurses, including the nurse anesthetist, so as to make him responsible for the way and manner in which the anesthetic was administered by Hanson. It is true that Hanson was in the general employ of the hospital; nevertheless, on this record it is inferable that he stood in the position of a lent servant who, for the purpose and duration of the operation, occupied the position of servant of the defendant. The rule is, said the Supreme Court, that where a servant has two masters, a general and special one, the latter, if having the power of immediate direction and control, is the one responsible for the servant's negligence. When a surgeon occupies such a position, his duties and liabilities respecting supervision and control over the administration of the anesthetic are substantially the same as those respecting the other phases of the operation and his treatment of the patient generally; that is, he is bound to exercise such reasonable care and skill respecting the administration of the anesthetic as is usually exercised by average physicians and surgeons of good standing in the same community.

It would seem from what we have said, continued the court, that the challenged instructions must be held in error in eliminating from the case the doctrine of *respondeat superior*. The defendant sought to sustain the instructions as given on the theory that the nonsuit as to Hanson in the former trial relieved the defendant from liability for any act or omission connected with the conduct of the nurse Hanson in administering the anesthetic, and such is urged to be the law of the case. The contention would seem to be without merit. The decision on the former appeal may not be invoked for the purpose of limiting the liability of the defendant or restricting the scope of the issue of negligence as to him. The evidence that was adduced in the trial, including that which was substantially the same as on the first trial and also the new evidence offered on retrial, should have been evaluated in the light of the general rules governing the doctrine of *respondeat superior*. The defendant urges that there is neither allegation nor proof to support any finding of negligence against the defendant based on the negligent acts or omissions of Hanson. The record impels the other view. The gravamen of the complaint is that this was an anesthetic death. There is specific allegation that the defendant permitted an overdose of ether or anesthetic to be administered by Hanson. The evidence offered at the first trial, which was held to be sufficient to make out a *prima facie* case of actionable negligence, was substantially reoffered at the second hearing. Also, on retrial, substantial new evidence was offered tending to show actionable negligence of the defendant based on the conduct of the nurse Hanson.

Another contention raised by the plaintiff related to a hypothetical question. One of these questions, after stating the facts of the case, ended ". . . have you an opinion satisfactory to yourself as to whether or not the actions of Dr. Joyner in his treatment and care of the patient after postoperation and the conditions under which she was kept and observed during that time would constitute a reasonable degree of care to be exercised by a diligent physician on a patient following a tonsillectomy?" Instead of asking the witness whether in his opinion the treatment outlined in the hypothetical question constitutes "a reasonable degree of care to be exercised by a diligent physician," said the Supreme Court, it would seem to be the better practice, more nearly in accord with approved precedents, to let the witness say whether in his opinion the treatment and care given, as outlined in the hypothetical question, was in conformity with approved medical practices and treatment in the same locality, thus leaving it for the jury to draw from the evidence its own inferences as to whether the physician exercised reasonable care in applying his professional knowledge and skill to the patient's case.

Accordingly the judgment of the trial court in favor of the defendant physician was reversed and the case was remanded for a new trial. *Jackson v. Joyner, 72 S. E. (2d) 589 (N. C., 1952).*

Hospitals in General: Admissibility in Evidence of Hospital Records.—This was an action to recover damages for personal injuries sustained by a pedestrian in a collision with a moving streetcar. From a judgment for the defendant on the ground that the plaintiff-pedestrian was contributorily negligent, the plaintiff appealed to the Supreme Court of Missouri.

After the accident the plaintiff was taken to the St. Louis City Hospital. The hospital records contained, among others, entries stating that a 52-year-old white man (the plaintiff) was admitted at about 11 p. m., conscious and rational; the patient stated that he walked into the front corner of a moving streetcar where the Hodiamont carline crosses Union Blvd., was knocked to the ground, and suffered an injury to his right leg and left thoracic region; and roentgen examination revealed a fracture of the neck of the right femur. Other entries concerning the plaintiff were, ". . . Pain in right hip and left chest. Patient was walking across the sidewalk at Union and Raymond, and either walked into streetcar or it struck him. Patient was immediately knocked down and had immediate pain in right hip and left chest. The patient was not knocked unconscious, but was unable to get up and had pain and disability. . . ."

The Missouri Uniform Business Records as Evidence Law provides "A record of an act, condition or event shall, insofar as relevant, be competent evidence if the custodian or other qualified witness testifies to its identity and the mode of its preparation, and if it was made in the regular course of business, at or near the time of the act, condition or event, and if, in the opinion of the court, the sources of information, method and time of preparation were such as to justify its admission." This act, said the Supreme Court, is in the precise language of the Model Act approved by the National Conference of Commissioners on Uniform State Laws in 1936 and has the purpose of avoiding the many antiquated and technical rules of common law regarding the admissibility of business records as evidence. It will be noted that "business" as used in the act includes "every kind of business, profession, occupation, calling or operation of institutions, whether carried on for profit or not."

Cases that we have examined are clear in ruling that the statutes making admissible records made in the regular course of business crystallize a rule that is an exception to the evidence-excluding hearsay rule. In our opinion, said the Court, the record entries in this case reflect the result of an inquiry helpful to an

understanding of the medical or surgical aspects of the patient's hospitalization. We do not think that the entries admissible under the act are invariably limited to "observable" (in the sense of being visual) facts or events incident to the treatment of the patient in the hospital. In our case the entries do indicate, in a way, the "cause of the accident"; but, in our opinion, the entries also indicate how the plaintiff was injured. We believe the record of the statement made by the patient (plaintiff) in this case, insofar as the statement recorded was relevant, and helpful to, or of aid in, the diagnosis and treatment of the patient's injury, was admissible. The hospital wanted to know how the patient got hurt, said the Supreme Court. This was helpful to the hospital because it aided in determining the nature and extent and proper treatment of the plaintiff's injury. The patient stated how he got hurt; the statement was recorded for the apparent purpose of furthering the hospital's business of determining the nature and extent and proper treatment of the injury; and the record of the statement was apparently made by some one of the hospital staff who presumably, in the circumstances of the recording, had no occasion to falsify the record. The record was surely of something—an act, condition, or event—in the regular course of the hospital's business.

The Supreme Court accordingly held that the hospital record was properly admitted in evidence, and the judgment in favor of the defendant was affirmed. *Melton v. St. Louis Public Service Company, 251 S. W. (2d) 663 (1952 Missouri).*

MEDICAL FILM REVIEWS

Fraud Fighters: 16 mm., black and white, sound, showing time 16 minutes. Produced in 1949 by RKO Pathe, New York. Procurable on lease from McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 18.

The film is designed to acquaint the public with some of the details of the activties of the Food and Drug Administration in Washington and elsewhere. It begins by depicting an investigation of a drug for diabetes that, after long and careful investigation, was revealed as the cause of death of a diabetic patient. As a result, the manufacturer who prepared the drug in a dirty garage was prosecuted under the law and was convicted. The details in this case are accurate insofar as the actual food and drug procedures are concerned. The film also touches briefly on the other activities of the Food and Drug Administration, such as foods and food standards; drugs, particularly the antibiotics certification program; food color certification, and cosmetics. The film contains interesting facts that everyone should know about. It is suitable for all adult audiences.

Nursing Care in Poliomyelitis: 16 mm., black and white, sound. A series of three films: (1) **Low Spinal Polio,** showing time 28 minutes; (2) **Bulbar Polio,** showing time 20 minutes; and (3) **The Respirator Patient,** showing time 29 minutes. Produced in 1952 for Science Pictures, Inc., for the Advisory Nursing Services for Orthopedics and Poliomyelitis of the National League for Nursing. Procurable on purchase from Science Pictures, Inc., 5 E. 57th St., New York, or on loan from the National League for Nursing, 2 Park Ave., New York, or the National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York.

In the first film of this series, nursing in the low spinal type of poliomyelitis is presented by an expert technician. A child, not a patient, cleverly and cunningly portrays the patient's part. The importance of maintaining correct body alignment is shown by demonstrating incorrect and correct methods. Physical therapy procedures, such as hot packs, are made easy by using a trained team of physical therapist, nurse, and nurse-aide. The second film, dealing with nursing in bulbar poliomyelitis, shows a professional actor in the role of a patient with laryngeal involvement. The natural apprehension is relieved by thoughtful nursing and expert technique. One gets the impression that poliomyelitis, with professional care, is not a hopeless condition and is less dangerous than many fear. The third film, on the respiratory type of poliomyelitis, shows the use of the iron lung and the effectiveness of nursing the patient in this respirator. The rocking bed is used to facilitate the release from the respirator by using gravity to cause lung motion. The important nursing procedures are done in full view of the audience and are comprehensively covered. This series of films represents a valuable review and teaching tool of the nursing procedures taught in classroom and clinical practice. They are comprehensive, and the vocabulary is on a level for professional nurses. There is enough human interest to hold the attention throughout. The commentary is appropriate and clear. The films give the impression that nursing in poliomyelitis can be a rewarding and satisfying experience. These films are highly recommended for nurses.

THE LEISURE CORNER

LET'S GO FISHING

Fishing might well be called a universal sport. It has been practiced since very early times and at all places in the world. It has devotees of all ages and of both sexes. In the United States, statistics indicate that fishing is the most popular of sports. In 1953, 18 million Americans bought fishing licenses, and the number would be considerably larger if the fishermen in states not requiring licenses were counted.

Perhaps one of the reasons for the appeal of fishing is the variety of ways in which it can be practiced. For the less active, a bamboo pole with cotton line, a fat worm, and a seat by the side of a quiet lake or river are sufficient. For the more active, more ardent fisherman, there are "glass" rods, artificial lures of many types, and many kinds of fishing terrain. To the novice, who remembers his childhood fishing days with a bent pin and cane pole, the array of fishing tackle to be found even in the local hardware store is almost bewildering. But fishermen usually derive much pleasure from sharing their knowledge with others, and the beginner can profit from this experience in choosing the necessary equipment. Later, he too will have his favorite lures and rods and may decide to try more specialized fishing with flies and a fly rod, which will give him an opportunity to develop finesse in casting and which may lead to an interesting auxiliary hobby, that of fly-tying.

Although much pleasure can be obtained from simple fishing techniques, studies of fishing habits and skill have shown that the more careful, more experienced fisherman is much more likely to catch his limit. While theories about the effect on fishing of the phase of the moon, the temperature, and the time of day are still being debated, knowledge of some basic techniques is essential under any fishing conditions. Learning to cast is the first hurdle for the novice. Many cities have casting clubs, where practice takes place in gyms or in outdoor pools especially marked for the purpose. Again, the more experienced fisherman can help the beginner either by example or by direct instruction. Reels have been designed to make casting easier, such as the spinning reel and the automatic reel, both of which prevent the annoying bird's nest of line, the "backlash," that used to be the inevitable mark of the beginner. And with the entrance of synthetic material into the tackle field, lighter, stronger, and more durable equipment is available. Rods, reels, and line are now being made of nylon or "glass" (actually glass fibers impregnated with plastic).

It may seem paradoxical, but one of the chief difficulties that the novice faces in learning to catch fish is that he is given so much information about it. First he reads a flood of advice by the newspaper sports writers and authors of books about fishing; then, when he finally gets to the lake or stream where he intends to take a crack at it himself, a second deluge of advice issues from the natives of the region and fellow fishermen whom he may chance to meet. No one is more free with advice about his sport than a fisherman.

Now all of this advice is, of course, helpful to the novice, but he must try to select that which is sound from the nonsense

and superstition that fishermen are wont to pass off as solid information. Another danger is that this ponderous protocol may overimpress the amateur and stifle his imagination. A case in point is John, who had just learned to handle a fly rod and drove to a small lake, where he intended to repeat on water what he had managed to do rather well on the lawn of his back yard. The owner of the fishing lodge pointed out the "best spot" for catching bluegills, and John was soon rowing his boat in that direction. Two other fishermen were already there, fishing "just outside the weeds" as he was told to do. Although fish were constantly breaking water inside the messy weed patch none of them would venture to take his fly in the open spots where his line could be cast without snagging the heavy growth. After a frustrating hour of fruitless effort, he rowed his boat directly into the weed bed. The water was only about 12 inches deep, and naturally the commotion of the rowboat put the hiding bluegills to flight. However, he did what no one had advised him to do. He sat in that same spot without moving for another 10 minutes or so, and soon the water immediately surrounding his boat was teaming with dozens of large bluegills. Avoiding all swift movements, he dangled his fly directly above the bluegills that he could plainly see in the quiet shallow water. Within a quarter of an hour he was back at the lodge with 20 beauties that would have made an expert proud. The same method failed to work the next day. Why? Who knows? Every lake and stream presents its own fishing problems. A technique that will successfully take bass in one place may be a complete dud in another. Some general rules can, of course, be laid down, but it is the successful fisherman who is imaginative enough to realize that any rules about fishing have serious limitations. It is often said, "Some days they bite and some days they don't, and that's that." There is a good deal of truth in this remark, but there are some fishermen who passionately dispute the "that's that" part of it. This breed of angler especially enjoys his sport when the fish "aren't biting" and when he has an audience of frustrated fishermen to show that he can catch fish anyway.

Both the kind of waters you are fishing and the particular species that you plan to take are important in selecting the technique to be used. The walleyed pike (or pike perch), for example, generally tends to inhabit deep, cool water, though it also favors fast running water even if it is shallow. If you are fishing in a small lake and plan to take walleyes, it is, therefore, advisable to seek out the deepest water. It is fun to do the exploring by yourself, but, if time does not permit, one of the natives will be delighted to tell you. Incidentally, it might be a good idea to ask him if walleyes have ever been caught in that lake. Some lakes, deep and cool, just don't have walleyes in them.

If you have established that the lake contains walleyes, or whatever fish you hope to catch, and have also become acquainted with the spots the fish is most likely to inhabit, you still have to choose a bait and a method of offering it to the fish. A very successful bait for walleyes is a large night crawler or medium-sized minnow trolled near the bottom of the lake. Sometimes a small spinner is placed ahead of the live bait to make it a little more flashy. With this technique the baited and weighted line drags about a hundred feet behind the boat while the fisherman slowly rows. Some anglers don't find this method exciting enough and may prefer to cast heavily weighted artificial lures instead.

While fishing for walleyes one may occasionally catch a northern pike and more rarely a bass, but the chances are not good. If it's bass you want, stay away from the very deep spots. Even in the hottest days of the summer the bass will not be too far from the shallows. His favorite feeding grounds are the shallow weed patches, where the smaller fish take cover and can be easily hunted. The bass will strike almost anything that moves and is not too many times bigger than itself. Small bass are often caught with lures larger than themselves.

If you are casting and the weeds are especially thick, it is advisable to use one of the many so-called weedless lures. They are usually not entirely weedless and tend to be a little "fishless," but they are still the best bet under those conditions. In the last few years, especially with the advent of the spinning and "free line" or automatic reels, there has been a definite tendency for fishermen to use smaller and lighter lures. Large lures can catch fish, but the smaller lures seem to be, by and large, more productive.

Much more could be said about techniques, and indeed hundreds of books have been written about all phases of fishing. Still, most of the fun and the results come from actual practice, and the opportunities for this are almost limitless. Fishing is the ideal vacation sport, for fishing spots can be found in the ocean, in inland lakes or rivers, or in mountain streams. Ocean fishing parties can be arranged, with an expert to guide the fisherman to the giant tarpon, sailfish, or marlin and with gear and instruction provided. In Canada, trading posts provide everything needed for a trip into the wilderness, including sleeping bags and a canoe. Many fishermen, however, find that part of the real fun of fishing is discovering an ideal fishing spot by chance. Perhaps the true pleasure of fishing is derived from the elemental appeal of water, which always seems to have a calming effect, or from the ancient sporting instinct of man in outwitting a prey, but, whatever the cause, the outdoor air near ocean, mountain stream, or lake, combined with the thrill of catching a fish and cooking it over an outdoor fire, make fishing a healthful and continuously satisfying sport for physicians.

BUSINESS PRACTICE

THE BUSINESS SIDE OF GROUP PRACTICE

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The conduct of the business affairs of physicians in group practice differs in many respects from that in solo practice; wherever it differs, it is more complex. It is not feasible to attempt to define group practice in this brief discussion other than to accept the broad working description of Moore: ". . . group medicine consists of a group of physicians . . . who combine their professional services, skills and financial resources to practice the prevention and treatment of disease. These practitioners use common office facilities and professional equipment. They employ in common subsidiary personnel for administrative and clinical purposes."

STRUCTURE OF A GROUP PRACTICE

Types.—The kind of internal structure or organization of the physicians in a group exerts a powerful influence on the business affairs. In the practices that are owned by a single physician (now the exception) the problems are almost identical with, though more extensive than, those of the solo practitioner—except for the physicians who are employees of the owner. More commonly a group practice is organized as a legal partnership with some physicians occupying the role of partners and others as employees of the partnership. The partnership agreement is a legal document that provides for various contingenices, such as the loss of a partner through retirement or death or the addition of new partners. Most partnership agreements are drawn in great detail with provision for such particulars as vacation time, sharing of income, obligations of the partners, and illness. No two are exactly alike.

In recent years another form of internal structure has evolved. This is known as the association or partnership-association. It is viewed by the states as a partnership and by the Bureau of Internal Revenue as a corporation. Like a corporation it permits the selection of officers and the adoption of by-laws, is said to be more flexible and more easily administered, and to have certain other advantages over the partnership structure except for the smallest groups. In a few instances in which state laws permit a corporation to practice medicine, a group of physicians may be set up as a definite corporation with all of the advantages and disadvantages of this form. Since this is permitted, however, in a few areas only, it is not a matter of wide concern.

Buildings and Equipment.—In many instances groups occupy rented quarters in a medical arts building, a remodeled house,

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or an office building. Under such circumstances the problem of overhead for housing differs little from that of the solo practitioner. With increasing frequency, however, groups have built or considered building combined offices to fit their special needs. This is a difficult and costly matter since such buildings frequently cost in the hundreds of thousands of dollars. Mortgage borrowing up to 50 or 60% of the cost of such buildings is usually possible, but the remainder generally has to be supplied or borrowed by the individual physicians in the group. Many methods of accomplishing this objective have been devised, but the net effect, in most instances, is that physicians in groups are likely to have a greater proportion of their capital invested in their professional housing than is the case for those who are in individual practice.

In addition to such financing, a frequent problem is the transfer of ownership of the equity in the building when one physician owner retires, dies, or resigns. Increasingly this problem has led to the establishment of a separate corporation—separate from the physician partnership or association practicing medicine—to own equity in the building. It is usually provided that in leaving the group a physician who owns capital shares in the building must sell them back to the remaining physicians so that the building does not become the property of those having no interest in the physicians practicing therein. Regardless of how the financing of the building is established, this latter point is of great importance. Generally speaking the equipment owned by a group is likely to be more extensive and expensive than each physician would consider necessary if practicing alone. This poses an additional problem of financing; sometimes the equipment is included with the financial arrangements surrounding the building, and sometimes it is directly owned by all or some of the physicians in the group.

The Physician in Group Practice.—The most important and difficult business side to group practice relates to the physicians in it. In a few instances a group is so set up that each physician receives his exact personal earnings after deducting a fixed or flexible amount for overhead. It appears that this method is sometimes successful but it also differs little from the situation existing when several physicians practice independently under one roof.

More commonly, and it is sometimes included in the definition of group practice, all of the income from the physician's fees is pooled, the overhead taken out of the pool, and the remaining income divided among the physicians under a prearranged plan. The methods of dividing such income vary widely and no two are exactly alike. In a few instances all net earnings are shared exactly equally among the partners. The principal advantage of this method is its simplicity. In the course of time, however, differing ages, special fields of practice, attractiveness for patients, application to work, and other variables enter in so that some physicians come to feel that they are paid less and others more than they are worth. Consequently it is unusual for a group to be able to continue for any great number of years with this method of dividing income equally.

Some methods of deciding how the net income should be shared among the physicians are extremely complex and are based on what is known as the point system. Under such methods points are assigned for such factors as length of time with the clinic, bookings, number of referrals, attraction of new patients, and board certification. Others attempt to achieve equity in income on a less mathematical basis using an executive or finance committee to decide what the income of each physician should be in the light of his accomplishments and contributions to the group as a whole. The purpose of these methods is to attain fairness in income to all, but they are all devices subject to the human frailty that scarcely anyone feels justly rewarded for his endeavors! No method has been devised, or is likely to be, that will satisfy all physicians at all times that the distribution of income is completely equitable, at least as far as they themselves are concerned. Consequently it is probable that the method should be established as fairly as possible, that there should be a right of appeal on the part of the individual physician who feels he is not getting his just deserts, that the concensus of the majority of physicians in the group is probably more nearly accurate than that of any one person over an extended period of time, and finally that an element of good faith and confidence among the physicians in a group-practice clinic is essential in order to make any method work successfully.

A young man entering an established group should consider several other points. Ordinarily he can expect what amounts to a ready-made practice with little or no waste of professional time such as is so often encountered if he starts to practice by himself. He should understand, however, that as a new physician he sees patients who would have been seen by others if he had not been there; therefore, he reduces the income of the other members of the group at first, because they have to share with him income that they would have divided among fewer physicians if he were absent. This is a point that the physician joining a group frequently overlooks, especially after two or three years with a group when his bookings have climbed to a point that is not reflected in the income he receives. To be perfectly just he should, for this reason, expect some lag between his earning capacity and his take-home income.

It is difficult to state specifically whether the physician in group practice or in solo practice is better off financially. As mentioned, the physician joining a group practice is likely to do better financially at first than his colleague who has to build up his own practice. In the middle professional years, however, the net income of physicians in groups, particularly those in surgery or the surgical specialties, is likely to be less than that of equally competent colleagues in individual practice. This frequently causes dissatisfaction. The physician may well view this problem as a lifetime question. With higher professional income at the beginning of practice, lower in the middle years, and a less rapidly declining income in the later years (a fairly common pattern), the physician in group practice is probably as well off financially as the one in solo practice. This aspect of professional earnings, however, is one that should be carefully considered before entering a group practice lest unhappiness occur during the middle years.

One development bearing on this question is that of so-called fringe benefits for those associated with group practice clinics. These vary from group to group but may be of great value, e. g., specified time for sick leave and vacations; time off for medical meetings or graduate courses; group life insurance; and possibly pensions, though the latter have not yet developed to any great degree.

Nonmedical Personnel.—Most group-practice clinics must have many nonphysician employees. Most groups of any size have found it both necessary and desirable to employ a business manager to care for those problems of a business nature, for which the physician is not only unqualified but which would also waste a good deal of his professional time. This is an important function in all but the smallest groups, and the occupant of this post also has a great deal to do with the employment of the many other nonmedical contributors to the workings of the group: nurses, secretaries, technicians, telephone operators, record librarians, and others. This extensive need for nonmedical or "paramedical" personnel constitutes a large part of the overhead of groups.

ORGANIZATION FOR THOSE IN GROUP PRACTICE

The complicated aspects of group practice are reflected by the presence of two organizations (United States and Canada) aimed at improving the methods, studying the problems, comparing the results, and making available information on group practice. These are the National Association of Clinic Managers established in 1926 and the American Association of Medical Clinics established at the professional level in 1949. The former association holds annual and regional meetings, publishes a quarterly periodical, maintains a placement service for business managers, and conducts many other activities. The latter also holds annual meetings, publishes a bimonthly bulletin, maintains a placement service for physicians desiring to enter group practice, operates a group life insurance program, and fulfills a number of other functions.

Although the professional aspects of medicine as practiced by groups are paramount, the business problems connected with such operations require special attention. There is almost certainly no one set of procedures that is applicable to all groups, and the business methods should always be tailored to the necessities of the individual group.

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MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Cardiac Arrhythmias in the Aged. S. Storch and Ziang Tsien Tang. Am. Pract. **5**:367-373 (May) 1954.

The high incidence of abnormal rhythm in the aged is due to changes in the myocardium, the aging process itself, valvular involvement aggravated by preexisting valvular diseases, and nutritional deficiencies. Certain treatments that are fairly innocuous in younger patients should not be employed in the cardiac arrhythmias in the aged. Frequently, however, there arise in the aged abnormalities of cardiac rhythm that disturb the examining cardiologist much more than the patient and in which treatment may do more harm than good. Many aged patients seem well despite complete heart block, auricular fibrillation with ventricular premature beats, and often other electrocardiographic changes that would seem ominous in younger patients. The authors found 189 abnormal rhythms and disturbances of conduction in the electrocardiograms of 522 persons in a home for the aged. In the auricular tachycardias, which are among the more serious of cardiac arrhythmias in the aged, the intravenous administration of lanatoside C was most effective. Mecholyl, carotid sinus stimulation, and phenylephrine (Neo-Synephrine) hydrochloride have little place in the treatment of auricular tachycardias in the aged. In the ventricular arrhythmias, procaine amide should be tried before quinidine. When quinidine is indicated, as in auricular fibrillation or flutter, it should not be withheld merely because of the age of the patient. The authors prefer digitalization with digoxin and maintenance with digoxin or digilanid, if trial proves that these preparations are tolerated. They always consider the possibility of multiple cardiac lesions in the aged when dealing with arrhythmias, e. g., coexisting rheumatic, syphilitic, thyrotoxic, nutritional, or even congenital heart disease. Electrocardiographic records resembling the Wolff-Parkinson-White syndrome do occur in the aged and may be associated with a high incidence of paroxysmal tachycardias. Strophanthin may be given to patients with cardiac arrhythmias and heart failure. Oxygen is a valuable adjunct in the treatment of arrhythmias in the aged. Complete atrioventricular dissociation is often well supported by the aged patient and may not require specific treatment.

Dust Asthma. P. Vallery-Radot, R. Wolfromm, B. Halpern and P. Liacopoulos, Semaine hôp. Paris **30**:1537-1541 (April 14) 1954. (In French.)

Ordinary house dust acts, in those persons sensitive to it, as a specific allergen, not as a mechanical irritant. The authors studied 74 patients with dust asthma, of whom only 13 came into contact with dust in their occupations. The typical pattern of this allergy includes the following features: beginning in youth, attacks in closed, heated places, high frequency of attacks at the beginning of the cold season (when the heat is first turned on and dust is stirred up), and improvement at the seashore or in high altitudes. This kind of asthma is often associated with an allergy to bedding and an infection of the superior aerial passages or of the bronchi. It can be detected by cutaneous reaction to dilutions of dust antigen. The only definitive treatment for dust asthma is desensitization by injections of the specific antigen. Symptomatic treatment consists of removing as many allergens as possible from the patient's environment by such means as air conditioning, antiallergenic bedding, etc. Associated infections should, of course, be treated.

Clinical Study of Carotid Sinus Reflex. F. Brauch. Deutsche med. Wchnschr. **79**:676-680 (April 23) 1954. (In German.)

Hypersensitivity of the carotid sinus mechanism may be elicited by mild physical stimulation of the sinus and may lead to bradycardia and sudden collapse with cardiac arrest. Several factors contribute to increased sensitivity of the carotid sinus reflex. One of these is the cardiac factor consisting of a type of a myocardial lesion of inflammatory, degenerative, or toxic type. Another is the vascular factor, pronounced sclerosis of the area of the carotid bifurcation. Inflammatory changes in the area adjacent to the carotid sinus or stimulation by foreign bodies also may cause hypersensitivity of the pressure receptors. An increased sensitivity of the autonomic nervous system may contribute to disturbances of this type. The surgeon, while operating on the neck, must avoid rough manipulation in the carotid region to prevent fatal paralysis of respiration. Collapse in the course of epidural spinal anesthesia also may be the result of a disturbance of the reflex regulation of the circulation. Treatment of the hypersensitive carotid sinus syndrome should be directed against the causative factors. Sclerosis of the vascular walls is refractory to treatment, but adequate dietary measures are advisable. Antiphlogistic and antibiotic therapy should be considered in the presence of inflammatory changes. Surgical treatment is required for the removal of foreign bodies, but intravenous anesthesia with hexobarbital sodium or a similar drug should be carried out with great caution. Cardiac decompensation or disturbances of coronary circulation may be improved by administration of glycosides. Combined administration of atropine and phenobarbital is recommended for hypersensitivity of the autonomic nervous system. Vagocardiac and depressor reflexes may be blocked with imidazoline preparations such as tolazoline (Priscoline) hydrochloride. The author obtained good results with acetoxythymoxyethyldimethylamine (Opilon) hydrochloride, a sympathicolytic preparation that was first given in doses of 5 to 10 mg. daily and then in doses of 30 mg. daily. Vertigo and intracranial pressure subsided and the reflex response of the carotid sinus to repeated pressure tests was reduced simultaneously. Reduced sympathetic tone results indirectly in diminution of the exceedingly strong vagal effects from the carotid sinus. Sudden interruption of an attack of paroxysmal tachycardia may frequently be obtained by finger pressure on the carotid bifurcation. Carotid sinus blockade with a slow injection of 20 cc. of a 0.5% solution of procaine hydrochloride at the level of the carotid bifurcation is recommended for the treatment of traumatic shock. Temporary elimination of the vagal inhibitory tonus results in rise of blood pressure after blocking of the sinus nerves.

SURGERY

Surgical Correction of Aortic Insufficiency. C. A. Hufnagel, W. P. Harvey, P. J. Rabil and others. Surgery **35**:673-683 (May) 1954.

In experiments on dogs, plastic valves were placed in the thoracic aorta of 300 animals for varying lengths of time. The most useful plastic valve was one of the simple ball type. It is composed of an inlet, a chamber that contains the ball, and an outlet. The entire valve is molded of methyl methacrylate in a single piece so that the inner surface can be made extremely smooth and without seams thus inhibiting coagulation of blood. The ball itself, which rests in the chamber, was made of methyl methacrylate and later of polyethylene. Under given pressure, the flow through the valve is essentially equal to that which would flow through a simple tube of a diameter equal to the inlet of the valve. The pressure differential necessary to open or close the valve completely is 5 mm. Hg. At each end of the

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valve, there is a groove on the outer surface, immediately adjacent to the inlet and outlet ends; the grooves are sufficiently deep to hold the aorta and multiple-point fixation rings with multiple teeth projecting from their inner surface. The rings are made of solid semiflexible nylon. The outer surface of the body of the fixation ring is grooved to maintain the position of the silk ligature on the fixation ring. The multiple teeth are sufficiently close together to coapt the aortic wall to the prothesis without leakage between the projecting points. The ring is split at one point so that it can be opened and placed around the intact aorta. Immediately adjacent to the split of the ring, two small holes are drilled through the body of the ring. These holes permit the insertion of an instrument to open and close the ring. The use of this instrument has the further advantage of producing fixation of the prosthesis in the aorta when the instrument is closed. It also allows the fixation suture to be tied without tension. Some dogs are still living five years after the insertion of the valve. In the absence of any imperfections of the inner surface of the valve, no clotting occurred. For clinical use, the valve was made in four sizes ranging from ¾ in. to 1⅛ in. in inside diameter to meet the requirements of the different diameters in the human aorta. Since September, 1952, 23 patients between the ages of 17 and 57 with aortic insufficiency were operated on and the currently acceptable valve and multiple-point fixation was used. The descending aorta just beyond the left subclavian artery was chosen for the site of the valve. In this site it is not necessary to occlude total blood flow, and this greatly reduces the operative risk in critically ill patients. In this site, the aortic occlusion is well tolerated for rather prolonged periods so that the margin of safety is great; also, approximately 75% of the total regurgitant flow is controlled in this site and the dangers of air embolism are minimized. Most of the patients were in the terminal stage of their disease. All showed signs of cardiac failure, and all had diastolic gallop rhythms and Austin Flint murmurs associated with severe aortic insufficiency. Of the first 10 patients, one died on the operating table from cardiac standstill before the insertion of the aortic valve, one of subacute bacterial endocarditis six weeks after the operation, and 2 of arrhythmias several days after the operation. Of the second group of 13 patients, 2 died postoperatively, one of myocardial failure and one of an acute exacerbation of rheumatic fever. The commonest cause of death in the postoperative period was ventricular arrhythmia, and this always was associated with serious degrees of conduction difficulties known preoperatively. Patients with such conduction defects offer a serious risk in contrast to those in whom there was no serious change in rhythm. In none of the patients was there any evidence of failure of the valve to function or of clotting. Seventeen patients are now living and well after the insertion of an aortic valvular prosthesis. These patients were followed for periods up to 11 months. They are greatly improved by subjective and objective criteria with a reduction in cardiac size as measured by roentgenogram. This group of patients represents the first attempt at the surgical correction of aortic insufficiency in man. Results obtained are extremely encouraging.

Temporary Aortic Occlusion in Abdominal Surgery. B. H. Burch, D. W. Traphagen, M. J. Folkman and others. Surgery **35**:684-689 (May) 1954.

Experimental occlusion of the abdominal aorta with a Potts coarctation clamp was carried out for varying lengths of time in 114 dogs. Results showed that the maximum safe time of aortic occlusion just above the celiac axis is 20 minutes, above the superior mesenteric artery 60 minutes, above the renal arteries 60 minutes, and above the inferior mesenteric artery 3 hours. The mortality rate of ligation and division of the aorta just above and just below the inferior mesenteric artery was 100% and 40%, respectively. After fatal occlusions of the aorta above the celiac axis, carotid blood pressure did not return to normal and continued to decline until death. There was a progressive rise of celiac, renal, and carotid arterial pressures when occlusion of the aorta approached these vessels from below, and a prompt lowering of blood pressure occurred when the occlusion site was above them. Cooling of the liver by means of rubber-covered copper tubing placed around the organ and a cooled refrigerant solution of alcohol and acetone passed through the tube by a pump, keeping the liver temperature between 10 and 20 C (50 and 68 F), allowed 60 minutes of occlusion above the celiac axis without fatalities. Dibenzyline (N-phenoxyisopropyl-N-benzyl-β-chlorethyl-amine hydrochloride) and Alloxan (2,4,5,6-tetraoxohexahydropyrimidine) appeared to exert protection from the effects of occlusion above the celiac axis; chlortetracycline (Aureomycin), in doses of 30 mg. per kilogram of body weight and 1 gm. of vitamin E did not offer lasting benefit. The liver and kidneys appeared to play a dominant part in determining the outcome after aortic occlusion. Microscopic evidence of focal liver necrosis and renal tubular damage occurred in fatal occlusions above the celiac axis. Blood chemical determinations made just before death in fatal aortic occlusions above the celiac axis did not reveal changes of sufficient magnitude to account for the deaths resulting from the occlusions. These observations are of interest in regard to the use of aortic occlusion as a means of facilitating surgical procedures within the abdomen.

NEUROLOGY & PSYCHIATRY

Long Term Evaluation of Prefrontal Lobotomy in Chronic Psychotics. R. F. Medina, J. S. Pearson and H. F. Buchstein. J. Nerv. & Ment. Dis. **119**:23-30 (Jan.) 1954.

Of 46 chronic psychotic patients subjected to frontal lobotomy and studied by the control method eight and one-half years after surgery, 25 were matched individually with 25 control patients at the preoperative level on the basis of race, sex, age, preoperative diagnosis, period of institutionalization, age at time of institutionalization, years of formal education, marital status, and occupational level. All members of both groups were white, each group consisted of 10 male and 15 female patients, and each group was comprised of 19 patients with schizophrenia and 6 patients with affective psychoses. The control group was composed largely of patients for whom lobotomy permission had been refused by the relatives. In six (13%) of the patients operated on, convulsions developed postoperatively and two of the six had their initial seizure between five to six years postoperatively. Because of a much shorter follow-up, spuriously low convulsion rates were reported by other workers. Of the 20 patients operated on and who showed the greatest degree of improvement, 5 (25%) reached their peak of adjustment within one year after surgery and 12 (60%) within five years, but an additional 8 (40%) continued to improve up to eight years postoperatively. A regression in behavior to a lower adjustment level was observed in five patients, apparently independent of age, in whom a high peak of adjustment had been maintained for a number of years after lobotomy. There was no relationship observed between degree of improvement and sex or between degree of improvement and the occurrence or absence of convulsions. There was a statistically significant positive correlation between degree of improvement and age at time of operation, and a significant negative correlation between degree of improvement and length of time of institutionalization before the surgical intervention. These findings were thought to emphasize the importance of psychic tension in the selection of patients for lobotomy since the patients showing the least degree of improvement were those with an early age of onset of psychosis and the patients who had been hospitalized for the longest periods. In both instances, preoperative psychic tension would be at a minimum. While only one (4%) of the 25 control patients showed pronounced improvement or complete recovery and 22 (88%) of the controls remained the same or became worse, 11 (44%) of the matched patients operated on reached the top adjustment levels and only 2 (8%) remained the same or became worse. Subdivision of the two groups into reaction types (schizophrenia and affective psychosis) showed a much greater degree of improvement of those operated on for both diagnostic groupings. There was no statistically significant difference in the mean degree of improvement between the two main diagnostic categories of the group operated on. Within the control group there was a statistically significant difference in degree of improvement favoring the affective psychosis group. While the affective disorder group had shown a certain degree

of improvement without treatment, the schizophrenic group had become somewhat worse. There was a statistically significant difference favoring the control group on the Wechsler's picture arrangement test and on the Porteus maze test. This would suggest a permanent decrease in ability after lobotomy in these particular areas of test performance that are believed to relate to the ability to look ahead planfully and to size up total aspects of social situations.

Electroencephalography and Clinical Late Evolution of Four Cases of Cerebral Hemispherectomy. S. Obrador and L. M. H. Larramendi. Rev. españ. oto-neuro-oftal. **10:**389-394 (Nov.-Dec.) 1953. (In Spanish.)

Since 1949, the authors have performed a cerebral hemispherectomy on seven patients with epilepsy and infantile hemiplegia secondary to cerebral hemiatrophy. This report deals with a follow-up study of four patients. The primary cause of the disease was a cerebral attack of unknown origin, at the age of 3 years; meningitis at the age of 5 years; trauma of parturition; and an infectious disease at the age of 9 months. Symptoms of infantile hemiplegia with atrophy and spasticity were typical in all four. The mental level was very low. The patients had frequent attacks of irritability and aggression and periods of abnormal behavior. Epileptic seizures were frequent and did not respond to medical therapy. The convulsions were general and focal with unconsciousness and psychomotor crises. The right cerebral hemisphere was involved in three patients and the left in the other. Electroencephalograms were characteristic of epilepsy, being more marked in the involved cerebral hemisphere than in the contralateral hemisphere. Pneumoencephalography showed advanced atrophy in various stages. A hemispherectomy was done when the patients were 17, 7, 11, and 29 years old, respectively. The operation was performed under general anesthesia, except in the 29-year-old patient, who was operated on under local anesthesia. A follow-up was continued for four years in the first patient and for shorter periods in the other three patients. In all the postoperative residual symptoms were the same as those of infantile hemiplegia observed in the preoperative period. The ipsilateral symptoms of motor and sensorial disorders were more marked in the arm than in the leg and face. Movements of the arm were restricted to the shoulder and the elbow. Movements of the leg made walking possible, although the foot was paralytic. Paresis of the face was marked. The mentality and behavior of the patients improved, even though the patients did not have postoperative reeducation. Irritability and aggression of the patients disappeared. The patients were tranquil, alert, and cooperative. In the first patient epilepsy had completely disappeared. The electroencephalogram of the residual cerebral hemisphere became normal. In the other three patients, epilepsy, or equivalent symptoms, occurred only occasionally and was very mild. The electroencephalogram of the residual cerebral hemisphere greatly improved.

GYNECOLOGY & OBSTETRICS

Small Cystic Degeneration of Ovary Treated with Androgens. A. K. F. Jacobsen, Ugeskr. laeger **116:**596-602 (April 22) 1954. (In Danish.)

The symptoms in cystic changes in the ovaries are probably of hormonal origin. Treatment with androgens is promising in cases with lower abdominal pain and other gynecologic symptoms varying according to the menstrual cycle. Fifteen patients with prolonged pain in the lower abdomen of an average of four years' duration were given a total of 250 mg. testosterone propionate (Perandren) intramuscularly in 10 injections in the first menstrual cycle, with the first injection on the second day of menstruation. In the two successive cycles, 50 mg. crystalline suspension of the drug was administered on the 2nd and 14th day after the start of menstruation. Fourteen of the patients were followed up from a year and a half to two years after the end of treatment; seven patients were free from symptoms, slight pain recurred after two years in two and after a year and a half in two, and in three there was negligible premenstrual tension. Six additional patients were free from symptoms on observation after six months. In all cases the general condition was improved. No side-effects were seen. The treatment described was ineffective in four cases of fibromatosis of the uterus with metrorrhagia as the only symptom.

Gastric Suction in Infants Delivered by Caesarean Section: Role in Prevention of Respiratory Complications. L. C. Freeman and R. B. Scott. A. M. A. Am. J. Dis. Child. **87:**570-574 (May) 1954.

There is a relatively high mortality and morbidity in infants delivered by cesarean section. Some investigators noted excessive amounts of amniotic fluid in the stomachs of infants of diabetic mothers delivered by cesarean section and proposed gastric suction as a preventive measure against aspiration and asphyxia. Investigations described in this paper were made to ascertain the amount of gastric content in infants delivered by cesarean section and to determine the effect of factors such as indication for operation, medication, anesthesia, and birth weight on the quantity of gastric fluid present. Studies were made on three groups of infants. Group 1 consisted of 100 infants delivered by cesarean section who received gastric suction immediately after birth and at four hour intervals for the first eight hours of life. Group 2 consisted of 92 infants delivered by cesarean section who did not routinely receive gastric suction, but were managed symptomatically and studied clinically with special attention to respiratory difficulties. Group 3 consisted of 52 infants delivered spontaneously of normal mothers; these infants received gastric suction in the same manner as the infants in group 1. Groups 2 and 3 served as controls. It was found that infants delivered by cesarean section have a greater amount of gastric content than infants delivered spontaneously. Respiratory distress was significantly less in infants whose stomachs were routinely emptied by suction. The amount of gastric content in infants delivered by cesarean section was not influenced by such factors as preoperative medication and anesthesia. With the exception of the diabetic mothers, the indication for the cesarian operation did not appear to influence the amount of gastric content in the infants in this series. The results of this study seem to warrant routine gastric suction of all infants delivered by cesarean section, especially those over 2,950 gm. as a means of preventing respiratory complications. This procedure is simple and decreases respiratory complications secondary to the aspiration of gastric contents into the tracheobronchial apparatus.

THERAPEUTICS

Functional and Anatomic Effect of Polyvinylpyrrolidone: An Analysis Based on the Study of 129 Cases. W. G. Bernhard, H. Grubin, A. H. Islami and others. Ann. Surg. **139:**397-402 (April) 1954.

Polyvinylpyrrolidone-Macrose, a synthetic product dispensed as a sterile, pyrogen-free, 3.5% solution containing sodium chloride, potassium chloride, calcium chloride, magnesium chloride, and sodium bicarbonate, was given intravenously as a plasma expander to 129 patients. The administration of the drug was carried out as rapidly as it would flow, and this usually took between 15 and 20 minutes. Volumes of polyvinylpyrrolidone ranged from a total of 500 to 2,000 cc. given continuously and, in a few cases, within 24 hours. Laboratory studies of the hematopoietic, hepatic, and renal systems were carried out within a few days after the administration of the drug and were repeated at intervals of 30 days to one year in each of the 129 patients, 81 of whom had hemorrhagic shock, 13 surgical nonhemorrhagic shock, 2 traumatic and nonhemorrhagic shock, 2 burn shock, and 7 peripheral vascular collapse. There were also 17 patients with impending shock and 7 with hemoconcentration. Twenty-nine of the 129 patients died, and necropsies were performed in 13. The response of every patient in shock was dramatic; there was a satisfactory rise of blood pressure and the return of a strong palpable pulse. In every patient the blood pressure was stabilized and maintained except when causative factors, such as hemorrhage, were not adequately controlled. In the quantities employed in the treatment either of shock or of hemoconcentration, polyvinylpyrrolidone appeared to be

neither nephrotoxic nor hepatotoxic, nor did it seem to have any permanent deleterious effect on the number and function of the morphological elements of the blood. The patients who received blood either during or after the infusion of polyvinylpyrrolidone did not show any signs or symptoms of incompatibility or untoward allergic or pyrogenic manifestations. An increase of the erythrocyte sedimentation rate occurred within a few days in almost every patient after the infusion of the expander. This increased rate returned to normal within one month in most of the patients. Polyvinylpyrrolidone is an effective and safe replacement solution for the successful treatment of various types of shock. The medicament provides prompt support of the circulation when blood is not immediately available. This emergency use of polyvinylpyrrolidone allows time for careful typing and cross matching and, thus, results in safer blood transfusions. It may be used judiciously to supplement blood transfusions and thereby conserve blood. Polyvinylpyrrolidone is an effective and safe plasma substitute for the successful control of hemoconcentration.

Magnamycin in Treatment of Granuloma Inguinale. H. M. Robinson Jr. and M. M. Cohen. J. Invest. Dermat. **22:**263-266 (April) 1954.

Robinson and Cohen used carbomycin (Magnamycin) in six patients (four men and two women) with clinical evidence of granuloma inguinale. Donovan bodies were discovered in a stained preparation from marginal scrapings in each patient. One patient was given 200 mg. of carbomycin every six hours; one was given 250 mg. every six hours; and four received 300 mg. every six hours. Complete healing was noted in all six patients. The response to treatment varied with the duration and extent of the condition. The shortest period in which complete healing was produced was 9 days and the longest was 44 days. No adverse reactions were observed. The authors conclude that carbomycin is of value in the treatment of granuloma inguinale, but the optimal dose has not as yet been established.

Increasing Frequency of Infections Due to Chemoresistant Bacteria: Preliminary Report on Significance of Large Penicillin Doses in Prophylaxis and Therapy. E. R. Eriksen. Ugeskr. laeger **116:**413-416 (March 18) 1954. (In Danish.)

In various hospital departments, infections caused by staphylococci, Bacillus coli, and gram-negative bacteria resistant to antibiotics have increased in frequency in recent years. Clinical experiences in thoracic surgery and in urology show that penicillin in large doses is effective prophylactically and therapeutically, especially in staphylococcic infections, but also in infections with gram-negative bacteria in which it is often necessary to apply another antibiotic as well. In all infections caused by bacteria resistant to other antibiotics and in infections in which there is a possibility of cross infection with such bacteria, the administration of from 2,000,000 to 5,000,000 units of sodium penicillin intramuscularly twice daily is recommended. Where nosocomial infection is possible, the newer antibiotics should be used only as a supplement to penicillin treatment. Unlike most other antibiotics, penicillin exerts a direct bactericidal action and is nontoxic even in large doses. It should be the preferred antibiotic in the treatment of all infections caused by bacteria sensitive to penicillin. Since penicillin in the concentration reached in the organism with the dosage named destroys most pathogenic bacteria, it should be tried in infectious diseases in which other antibiotics have been used.

Liquorice Extract in Addison's Disease: Successful Long-Term Therapy. R. J. Calvert. Lancet **1:**805-807 (April 17) 1954.

The desoxycortone-mimetic action of the juice and extract of licorice has been demonstrated in normal persons and in patients with Addison's disease. The triterpene constituent, glycyrrhetinic acid, and its diglucuronate, glycyrrhizinic acid, have also proved effective in brief investigations. Calvert describes the case of a woman, aged 54, who was given licorice extract for Addison's disease. The initial control of this patient required the large dose of 60 gm. of licorice extract daily. The absence of a favorable response earlier to half that amount tempted the author to abandon this treatment. As treatment continued, however, the initial insensitivity to this therapy was soon reversed, and the patient's present maintenance dose is 3 gm. daily. Pelser and associates in 1953 also observed increasing sensitivity to licorice therapy. They considered that there was no evidence that this resulted from regeneration of adrenocortical remnants—a view confirmed by the present observations. In the present study, a cumulative action of extract of licorice was also observed. Licorice extract has a useful place in the long-term treatment of Addison's disease.

RADIOLOGY

Bone Changes in Leukemia. P. W. Dorsey. J. Michigan M. Soc. **53:**153-156 and 159 (Feb.) 1954.

Two hundred forty-nine cases of leukemia were reviewed and the bone changes in 72 in which adequate radiograms had been made are presented. Thirty per cent of the patients with lymphatic leukemia who were studied with radiograms showed bone changes; this group represented 9% of the total of patients with lymphatic leukemia. Bone changes in the myeloid group were present in 6% of the patients adequately studied and 1.8% of the total number of leukemic patients. In both groups, the greatest bone changes were in patients with the aleukemic forms. Children under 6 showed the most changes. The long bones were oftenest involved, especially in the metaphyses. In all cases, the patients died within a few months after bone changes had been detected. The five types of roentgenologic findings, demineralization, moth-eaten areas of destruction, transverse lines of diminished density, periosteal elevation, and osteosclerotic changes, are discussed in some detail, together with the relationship between bone changes in chronic myelogenous leukemia and myelosclerosis. Roentgen diagnosis of the bone changes in leukemia requires that it be differentiated from neuroblastoma, cancer metastases, tuberculosis, hematogenous osteomyelitis, diffuse type of Ewing's tumor, and Hodgkin's disease.

Prevention of Reactions in Intravenous Urography (Preliminary Report). S. W. Simon, H. I. Berman and F. C. Barald. Ohio M. J. **50:**247-248 (March) 1954.

Simon and associates say that Getzoff's suggestion in 1951 of giving tripelennamine (Pyribenzamine) in 50 to 200 mg. doses orally one hour previous to injection of urographic contrast mediums has reduced the incidence of reactions to these contrast mediums. Their own aim was to simplify and standardize the procedure and, if possible, to reduce the rate of reactions even more. They feel that a standard method is needed for all patients whether allergic or not and regardless of the outcome of sensitivity tests. They mix the contrast medium in the syringe with 2.5 ml. of chlorprophenpyridamine (Chlor-Trimeton) maleate solution, which contains 5 mg. of the drug. One milliliter of this mixture is given intravenously as a test dose, and, with the needle in the vein, a pause of approximately one minute determines tolerance. If no adverse reactions occur, the remainder of the solution is injected. In 146 patients in whom this method was used, only mild reactions resulted, and, if flush, arm pain, and foreign taste, are not considered, the rate was about 4%.

Diagnostic Value of Determining Radioactivity in Blood After Administration of Tracer Dose of Radioactive Iodine. G. A. Lindeboom, T. E. Hoogendijk-van Dort and J. de Jong. Nederl. tijdschr. geneesk. **98:**821-827 (March 27) 1954. (In Dutch.)

Lindeboom and associates show that examination of the blood after administration of a tracer dose of radioactive iodine is more helpful for the diagnosis of hyperthyroidism than is the determination of radioactivity in the urine or thyroid. Serial determinations (1, 3, 6, 24, 48, 72, 96, and 120 hours after administration of the tracer dose) of the total and thyroxin activity in the plasma of 30 persons with normal thyroid function and in 30 with hyperthyroidism revealed that an interval of 48 or 72 hours should elapse, if only a single determination is made. Determinations made at the end of 6 and 24 hours have the advantage of emphasizing the secondary increase in thyroxin activity, which is characteristic of hyperthyroidism. The authors cite histories of two patients that illustrate the superiority of studying the radioactivity in the blood, particularly the blood protein, rather than the uptake and excretion of the tracer dose.

BOOK REVIEWS

Fundamentals of Anesthesia. Prepared under editorial direction of Consultant Committee for Revision of Fundamentals of Anesthesia, publication of Council on Pharmacy and Chemistry of American Medical Association. Third edition. Cloth. $6. Pp. 279, with 89 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; W. B. Saunders Company, Ltd., 7 Grape St., Shaftesbury Ave., London, W.C.2, 1954.

Although this book is described as a third edition it is, as compared with the previous editions, completely rearranged and rewritten. It has also been expanded slightly. Opening with physiological, chemical, and physical considerations it goes on to discuss preoperative care, general and regional anesthesia, special applications, postoperative care, complications, inhalation therapy, hazards, and anesthetic records. In addition to listing the members of the A. M. A. Council on Pharmacy and Chemistry, this book lists the members of the committee on revision and the contributing authors. The first two editions were published during World War II as a source of basic information on anesthesia for medical officers of the armed forces. Since the war the book has been so widely used as a textbook in medical schools that it was deemed essential to bring it up-to-date. Because it is primarily a guide, general principles have been stressed and many details have been omitted. Dr. Stormont, in his preface, stresses the fact that the choice of anesthetic agents and techniques is secondary to their judicious application. The text is well illustrated with photographs and diagrams. The appendix contains tables of equivalents and standard values and a classification of agents used in regional block anesthesia based on whether or not they can be resterilized by autoclaving. The book is well indexed and can be recommended as a teaching aid for students and a ready reference for those starting to specialize in anesthesiology.

True Adventures of Doctors. By Rhoda Traux. True Adventure Library, edited by Manuel Komroff. Cloth. $2.75. Pp. 216, with illustrations by Paul Galdone. Little, Brown & Company, 34 Beacon St., Boston 6, 1954.

This book, which should have great appeal for teenagers, is one of a series of books dedicated to the notion that adventure is a part of life—to be found almost anywhere, at one's elbow as well as at the end of the earth. The contents extend from pioneer discoveries in medicine to the latest achievements. The author has skillfully related the accomplishments of such early historical figures as Ambroïse Paré, Andreas Vesalius, Edward Jenner, Crawford Long, Joseph Lister, and Paul Ehrlich, and the more recent conquests of George Minot, Frederick Banting, Alexander Fleming, Helen Taussig, and Alfred Blalock. For the drama and meaning of pioneer and contemporary discoveries in medicine, this book provides an excellent introduction.

Manual of Clinical Mycology. By Norman F. Conant, Ph.D. Professor of Mycology and Associate Professor of Bacteriology, Duke University School of Medicine, Durham, North Carolina, David Tillerson Smith, M.D., Professor of Bacteriology and Associate Professor of Medicine, Duke University School of Medicine, Roger Denio Baker, M.D., Chief, Laboratory Service, Veterans Administration Hospital, Durham, Jasper Lamar Callaway, M.D., Professor of Dermatology and Syphilology, Duke University School of Medicine, and Donald Stover Martin, M.D., Chief, Bacteriology Section, Communicable Disease Center, Chamblee, Georgia. Second edition. Cloth. $6.50. Pp. 456, with 202 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; W. B. Saunders Company, Ltd., 7 Grape St., Shaftesbury Ave., London, W.C.2, 1954.

This new edition is an excellent practical text for descriptive information and identification of the specific fungi of actinomycosis, nocardiosis, North and South American blastomycosis, coccidioidomycosis, histoplasmosis, cryptococcosis, moniliasis, geotrichosis, aspergillosis, mucormycosis, penicilliosis, sporotrichosis, maduromycosis, rhinosporidiosis, chromoblastomycosis, tinea nigra palmaris, piedra, trichomycosis axillaris, tinea versicolor, erythrasma, otomycosis, and conidiosporiosis, and for the symptomatology, prognosis, treatment, immunology, and mycology of the dermatomycoses. A chapter on the fundamentals of mycology orients the laboratory technician or student in the terminology of fungus description and classification, and another chapter on contaminants lists many nonpathogenic fungi that may appear in cultures or tissue materials. An appendix on mycologic, pathological, immunologic, and dermatological methods closes the text. The subject matter is well presented. The book is a useful guide in the laboratory identification of many fungus infections and their clinical treatment.

After the Doctor Leaves: A Practical Guide to Approved Post-Medical Care and Treatment of Chronic Diseases for the Patient and His Family. By Marguerite Clark. With foreword by Howard A. Rusk, M.D. Cloth. $3.75. Pp. 310. Crown Publishers, 419 Fourth Ave., New York 16, 1954.

It has been estimated that about 26 million Americans have some form of chronic disease, orthopedic impairment, or serious defect involving sight or hearing and that each year an additional quarter of a million persons become disabled by chronic ailments. Fortunately, most chronic diseases have been stripped of their terror as the result of medical research and the type of popular education that is exemplified by this book. It cannot be denied that patients with chronic disease to whom their ailments have been intelligently explained often lead a better-regulated, more satisfactory life than those who have not received sound medical information. Once a chronically ill person obtains a clear understanding of his problem, resolves to cooperate with his physician, and is able to receive the proper medical care to prevent his disease from progressing, he is well on his way to a richer, fuller life. The aim of this book is to help the chronically ill person to profit by the medical experiences of other similarly disabled persons and to make better use of his physical abilities so that he can lead an active, useful existence. The book furnishes an excellent supplement to sound medical information and advice on such chronic ailments as heart disease, hypertension, rheumatism and arthritis, diabetes, ulcers, allergies, tuberculosis, cancer surgery, aging, mental and emotional difficulties, diseases of the central nervous system, and disorders of the musculoskeletal system. The author, who is the medical editor of a leading national magazine, once again demonstrates her skill in translating complex medical findings into accurate, readily understandable terms that the lay public can assimilate.

William H. Welch and the Rise of Modern Medicine. By Donald Fleming. Edited by Oscar Handlin. Cloth. $3. Pp. 216. Little, Brown & Company, 34 Beacon St., Boston 6, 1954.

This book consists of a group of integrated essays that attempt to assess the scientific achievements of William H. Welch, one of the truly distinguished physicians of the modern American medical era. Eight of his ancestral line were Connecticut physicians, and he himself helped found the hospital and medical school at Johns Hopkins, where he was eventually to serve as dean of the medical faculty and was later to be instrumental in the growth and development of the Rockefeller Institute for Medical Research. Welch was one of four at Johns Hopkins—Osler, Halsted, and Kelly were the others—whose impact on medical education in the United States is still potently felt. Welch advocated the German pattern of medical education, with its emphasis on the laboratory instead of the patient. Although he endorsed the "full-time" (no private practice) policy for the medical faculty at Johns Hopkins, his colleague William Osler maintained that full-time appointments would probably lead to "a set of clinical prigs, the boundary of whose horizon would be the laboratory, and whose only human interest would be research." Welch vigorously opposed coeducation for women in medicine, an attitude that is hardly consistent with the development of modern medicine. Although Welch's achievements were numerous, the author has a tendency to engage in hero worship; nevertheless, the book contributes a valuable survey of an important period in the history of modern medicine and is, therefore, to be warmly recommended.

These book reviews have been prepared by competent authorities but do not represent the opinions of any official bodies unless specifically so stated.

QUERIES AND MINOR NOTES

UNPOTABLE DRINKING WATER

To the Editor:—*Would a four watt germicidal lamp be sufficient to purify pathogenic water-borne bacteria in a 1,200 cc. reservoir in which the lamp was immersed, the water being constantly circulated through the reservoir at the rate of 200 cc. discharged every 10 seconds? I obtain drinking water from a 25 ft. dug well, which is 150 ft. slightly upgrade from a fresh-water, spring-fed lake safe for swimming. However, the drinking water is unpotable because of a high bacterial count in which Escherichia coli organisms predominate. Recently, I learned of an ultraviolet water purifier. The company states that their water purifier has been thoroughly tested by laboratories in the department of biological sciences at a Chicago university and that the ultraviolet rays of the four watt germicidal lamp will kill 100% of harmful bacteria in the water. This seems like a large order for such a small lamp.* *M.D., New York.*

Answer.—It has been established that ultraviolet light of about 2,600 angstrom units wave length readily inactivates vegetative forms of bacteria in fluid substances. The action is dependent on the ability of this dosage of radiation to reach the bacterial cell. Anything that decreases the amount of radiation will obviously decrease the efficiency of the inactivation. For example, deposition of minerals from water on the quartz or special glass will cut off a considerable amount of radiation. Suspended matter, turbidity, and color will also impede penetration of ultraviolet light. Thus, while ultraviolet devices for water purification have been shown to perform well under ideal laboratory conditions, they cannot be relied on under actual conditions of use. In addition, so far as known none of the devices on the market provide for a means of checking for reduced efficiency in operation. Furthermore, irradiated water carries no residual germicidal effect and so does not afford the same degree of safety as chlorinated water. For these reasons, public health authorities in the United States do not accept ultraviolet light for the purification of municipal water supplies, and question its value for individual water supplies.

TROPHIC ULCERS

To the Editor:—*A 50-year-old white man who had duodenal ulcer was treated by gastric resection. He also had manifestations of neurodermatitis. Recently he has had characteristic symptoms of Raynaud's disease. He has dulness, cyanosis, and pain of the tips of his fingers. He has a small trophic ulcer on the lateral aspect of the tip of his right forefinger, and a trophic ulcer on the tip of his left elbow, which he has had for eight months. At present he is taking tolazoline (Priscoline) hydrochloride, 5 mg. before meals and at bedtime, along with Nicotal tablets no. 2, one before meals and at bedtime. His blood pressure has remained 120/80 mm. Hg during therapy. I would appreciate suggestions as to the treatment.*

W. R. McLawhorn Jr., M.D., Fountain Inn, S. C.

Answer.—True Raynaud's disease is very rare, especially in 50-year-old men; triphasic color changes, however, may occur as a symptom of a large variety of diseases, such as arteriosclerosis, thromboangiitis obliterans, syphilitic arteritis, scleroderma, and neurotrophic lesions. Increased agglutination of red cells and platelets and a variety of other blood dyscrasias may be responsible for the symptoms described. This patient requires a thorough physical examination, including the state of his heart, his peripheral vascular tree, nervous system, differential blood count, and the state of the clotting mechanism. It is not likely that tolazoline would help in such a case, but no treatment can be of any promise until the cause of the lesions is determined.

ENLARGED OVARY

To the Editor:—*A 41-year-old multipara on routine examination was found to have an enlarged ovary, elliptical in shape, although somewhat flattened, 8 or 9 cm. in its largest diameter. It was soft, smooth, nontender, and freely movable. A doctor is said to have told her eight years ago that she had this mass, which apparently has not changed in size. Would it be wiser to remove this ovary, or would periodic examination be satisfactory?* *M.D., Wyoming.*

Answer.—In general, it is advisable to remove every ovarian growth that is more than 5 cm. in diameter and that persists. Occasionally an ovarian cyst of 5 cm. or more diameter diminishes in size, but if an ovarian neoplasm 5 cm. or larger remains for more than two months and certainly if it enlarges, it should be removed. This is in contradistinction to myomas of the uterus. The reason for this is the uncertainty of ruling out malignancy in an ovarian tumor without opening the tumor. A specialist trained in gynecologic surgery can occasionally perform a posterior colpotomy and examine the ovarian tumor, and, if it proves to be a simple cyst, the contents can be aspirated and the cyst resected. However, this operation is only for surgeons experienced in pelvic surgery. In the case cited, the ovarian enlargement that is elliptical, flattened, soft, and 8 to 9 cm. in its largest diameter should surely be removed without delay.

PSORIASIS

To the Editor:—*A 50-year-old man has had for 20 years a severe case of psoriasis involving face, arm, and trunk and with numerous large lesions from knees to ankles. Until two years ago it was resistant to all forms of therapy. In 1952 the patient suffered coronary thrombosis. He was kept in bed and at home as an ambulatory patient for six weeks. During this time the only change from his ordinary routine was that he stopped smoking cigarettes and has not smoked since. After complete rest for 10 days, his skin lesions began to disappear. They were completely gone in three weeks, and since that time he has never had the slightest sign of a recurrence of the psoriasis. Is there any explanation for it?*

Willard J. Lloyd, M.D., New Hartford, N. Y.

Answer.—There seems to be no explanation to offer for the fact that psoriasis disappears spontaneously. This is not a common occurrence, but it does occur just often enough to be an accepted fact. There is no question that rest in bed will sometimes help a patient with psoriasis but not as a rule to the point of complete disappearance of the disease. It might well be that if the explanation for the spontaneous disappearance of the psoriasis were known, it would give a lead as to the cause of the disease and the method of treating it.

USE OF CORTISONE AND ACTH DURING PREGNANCY

To the Editor:—*Do any adverse effects follow the use of cortisone and corticotropin (ACTH) in the last three weeks of pregnancy?* *J. B. Deisher, M.D., Seward, Alaska.*

Answer.—The administration of cortisone and corticotropin in therapeutic amounts during the latter weeks of gestation does not affect the course of pregnancy, labor, or the puerperium. Infants delivered of mothers receiving cortisone may exhibit withdrawal symptoms suggestive of hypoadrenalism immediately after delivery (Margulis and Hodgkinson: *Obst. & Gynec.* 1:276 [March] 1953).

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.